

AN EVALUATION OF A MULTI-UNIT
SCHOOL FOODSERVICE PROGRAM/

by

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(ABSTRACT)

The Omnibus Budget Reconciliation Act of 1981 decreased federal support for the NSLP by 15 percent. School foodservice administrators had to adapt effectively to shrinking resources in order to maintain program objectives and avert a decrease in program participation. The purpose of this research was to evaluate the impact of the federal budget cuts on the performance objectives of a multi-unit school foodservice program. In addition, the effects of program interventions were assessed by evaluating the attitudes of program participants and their parents. Random cluster sampling techniques were used to obtain 520 secondary students and 353 parents of students in the elementary and secondary schools. Data was collected from two survey instruments and school foodservice participation and budget reports. Overall, the school foodservice administrators dealt effectively with an immediate drop in participation and the reduction in federal funding. Program administrators were able to maintain program objectives and improve program participation and satisfaction.

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* * *

I would like to dedicate this thesis to my grandmother, Frances Hoffnagle, who I will always adore for her health awareness and athletic abilities up to the age of 85 years.

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INTRODUCTION

Background of the Problem

The National School Lunch Program (NSLP), authorized by the National School Lunch Act of 1946, is the largest federally-funded child-feeding program today. In 1946, the legislated program objectives were "to safeguard the health and well-being of the nation's children and to encourage the domestic consumption of nutritious agricultural commodities and other food" (Martin, 1978, p. 1). These objectives remain as the basis for the NSLP today. Federal assistance, through cash and commodities, provides subsidized lunches for all children and an additional cash reimbursement provides economically disadvantaged children with free or reduced-price lunches. Legislation requires that all lunches meet the nutritional standards established by the United States Department of Agriculture (USDA) and that each individual school lunch program operate on a nonprofit basis. The magnitude of the NSLP has provided many children and families with nutritional and economic benefits. However, the extent to which these benefits are received depends on the degree of participation in the program. In 1970, program participation had peaked with 52.1 million

children participating in the NSLP (U.S. Comptroller General, 1977). Declining school enrollments since this time, however, have affected participation levels. From fiscal year 1971 to 1981 participation increased from 24.6 million (U.S. Comptroller General, 1977) to 27 million (Schuster, 1982) children. The percentage of participants receiving free and reduced-price meals has also continuously increased (Hiemstra, 1982, U.S. Comptroller General, 1977).

The Omnibus Budget Reconciliation Act of 1981 decreased federal support for the NSLP. Hiemstra (1982) explained that the legislative changes were a part of "the President's overall initiative to reduce federal spending, taxes, and inflation and to improve the economy in the long run" (p. 74). In summary the major legislative changes relating specifically to the NSLP included the following:

1. decreased federal cash reimbursements for full-price and reduced-price lunches,
2. decreased rates of commodity entitlements for all lunches,
3. increased eligibility standards for free and reduced-price lunches,
4. tightened administration of eligibility determination for free and reduced-price meals (for example, social security numbers for all adult household members were required),

5. elimination of federal assistance funds for private schools charging more than \$1,500 annually for tuition,
6. elimination of federal milk reimbursements for schools serving subsidized lunches,
7. elimination of non-food assistance funds (for example, food service equipment assistance was terminated in all schools),
8. implementation of a variety of cost-saving requirements (for example, the "offer versus serve" provision was extended to the elementary schools and the cost-based accounting requirements and state plans of operations were eliminated), and
9. increased assistance to schools receiving only food commodity assistance (Heimstra, 1982, p. 73-74).

On August 13, 1981, the Omnibus Budget Reconciliation Act took effect and resulted in a 15 percent decrease in federal spending for the NSLP. A large drop in participation in the NSLP was attributed to the 1981 legislated changes. During the 1980-81 academic year, 26.4 million children were participating in the NSLP. As of April 1982, this figure had dropped to 23.3 million children. This represented an 11 percent decline in total student participation in a one year period. Hemstra (1982) also noted that a total of 1,722 schools also dropped out of the

NSLP as of October 1981. Since participation in the school lunch program is necessary to incur program benefits, local school lunch administrators must effectively deal with shrinking resources in order to attain program objectives.

Statement of the Problem

During the 1980-81 academic year, the Montgomery County Schools' lunch program was serving 79.1 percent of the average daily student attendance. In September 1981, immediately after implementation of the 1981 legislative changes, participation dropped to 70.4 percent of the average daily attendance. As a result of the 1980-81 school lunch survey findings, program administrators implemented a variety of new menu choices in all 17 county schools between September 1981 and March 1982. As of December 1981, school lunch participation had increased to 71.1 percent and by February 1982 participation increased to 71.8 percent.

This research study was undertaken to evaluate the impact of the 1981 national school lunch legislation on the performance objectives of the Montgomery County Schools' Lunch Program, and also to evaluate parents' and students' attitudes toward the 1981-82 school lunch program within the county. This research was proposed to answer the stated research questions:

1. To what extent did the 1981-82 Montgomery County School Lunch Program meet the following program objectives?
 - a. to provide 85 percent of the average daily student attendance with economical and nutritious meals?
 - b. to maintain revenue and expense figures at projected budget levels within each academic year?
2. To what extent did the 1981-82 program changes affect parents' and students' attitudes toward the school lunch program?

Objectives of the Study

The following research objectives were derived from the research question:

1. To report student participation in the school lunch program for the 1981-82 academic year and the previous three academic years.
2. To describe the extent to which parents and students perceive the school lunch to be economical.
3. To describe the extent to which parents and students perceive the school lunch to be

nutritious.

4. To compare the 1981-82 academic year budget projections with the actual fiscal performance for the same period.
5. To determine those factors which affect parents' and students' satisfaction and dissatisfaction with the 1981-82 school lunch program.
6. To determine those factors which affect student participation in the school lunch program.
7. To describe parents' and students' attitudes toward the 1981-82 lunch program changes, specifically:
 - a) the number of food choices served at each meal;
 - b) the frequency with which foods are served each month, or menu variety;
 - c) the kinds or types of food served;
 - d) the desserts being priced separately from the Type A lunch;
 - e) the price of the lunch; and
 - f) the a la carte program.

Delimitations (Limitations) of Study

Montgomery County is located in the southwest region of the Commonwealth of Virginia. The area includes 395 square miles and lies in the Valley and Ridge Province of the

Appalachian Mountains. As of 1980, the county's population was 65,516 people, compared to 47,157 people in 1970. This represents a 34.7 percent increase in population in the last 10 years. Approximately 70 percent of the labor force are employed by manufacturing and trade companies. The median family income was \$18,269 in 1980, as compared to \$8,255 in 1970 which represents an increase of 121 percent. Virginia Polytechnic Institute and State University is located in Montgomery County and in 1981 had a student population of approximately 21,000 students. There are also 11 elementary schools and 6 secondary (middle and high) schools with a total student population of 8,948 in 1981 (New River Valley Planning District Commission, 1982).

The scope of this research was a direct result of the Montgomery County School Foodservice Department Administrators' need for program evaluation since a number of changes were made in the program as a result of the 1981 Omnibus Budget Reconciliation Act and a previous school lunch survey. School lunch administrators wanted to have a clearer understanding of parents' and students' attitudes toward the 1981-82 school lunch program so that they could determine the effectiveness of the 1981-82 school lunch program changes in order to make the appropriate decisions about future program interventions. Research constraints imposed by the foodservice administrators and the county

school board included: very limited funding; minimal time available for data collection; and the necessity to include parents as well as students in the study. The needs and constraints imposed by the program administrators and program setting influenced the research design.

Process evaluation identifies problem areas that need to be changed in order to achieve the goals of the program. The evaluation of program processes, as described by Chommie and Hudson (1974), "looks at program processes to explain outcomes and in general to learn more about the interventions" (p. 682). The methodology used in the study of program process is descriptive and inductive in nature and does not necessitate the strict constraints of experimental design.

Survey instruments were used to provide a preliminary look at the effectiveness of the Montgomery County School Lunch Program. This research design is commonly referred to as a one-shot case study (Popham, 1975) or an after-only nonexperimental design (Weiss, 1972). A major limitation with this design is that extraneous variables are not controlled for. Since there is no control group, it is difficult to determine whether the attitudes toward the program and participation in the program were influenced by the program activities (Popham, 1971; Suchman, 1967; Weiss, 1972). The results are also not generalizable to school

districts across the nation except to the extent that other districts are comparable (Popham, 1975). The main focus of this research design was to determine the extent to which specific program interventions were successful in order to determine future alternatives. A preliminary examination of effectiveness of a program may then warrant further study under stricter conditions in order to determine to what extent the results may be attributed to the program interventions (Weiss, 1972).

Definition of Terms

The following terms are used in stating the research problems and objectives and are defined here in order to clarify their meaning in this research context.

A La Carte Lunch Program - It includes food items that are sold separately and may be purchased in addition to the Type A lunch or individually. For example, desserts are sold a la carte in all county schools and all meal components (meat, bread, vegetable, fruit and milk) are also sold individually in two of the larger high schools.

Attitudes - Opinions as measured by the degree people like or dislike, or are satisfied or dissatisfied with an item.

Average Daily Student Attendance - The average number of students in attendance is figured monthly and is used in determining the percent of students participating in the school lunch program.

Economical - The price of the student lunch is perceived to be inexpensive, somewhat inexpensive or about right (as opposed to somewhat expensive or expensive) for the amount of food received.

Free and reduced-price lunches - These lunches are provided to the economically disadvantaged as determined by the 1981-82 eligibility criteria.

Full-Price Lunch or Regular-Price Lunch - the Type A lunch bought for the full- or regular-price, as opposed to the reduced-price lunch or free lunch.

Kinds of Foods - This statement was used to refer to the specific type of menu items sold, for example, spaghetti, pizza, hamburger, or french fries.

Nutritious - The perceived healthiness of a meal as measured on a scale of one to ten - one being not nutritious and ten being very nutritious.

Student Enrollment or Student Attendance - The total number of students enrolled for school is figured quarterly and is not based on student attendance.

Type A Lunch or Student Lunch - This meal includes one selection from each of the five meal components

(meat, bread, vegetable, fruit and milk) and is purchased as a complete meal. In the secondary schools, however, a student may select three of the five meal components and pay the same price. This is referred to as the "offer versus serve" provision.

Assumptions

The following assumptions were made:

- 1) Parents and students were aware of the school lunch program and were somewhat aware of the 1981-82 program changes.
- 2) Parents' attitudes toward the school lunch program were influenced by their children's experiences and attitudes toward the school lunch program.
- 3) Program objectives were believed by program administrators to be feasibly attainable.
- 4) The Type A lunch meals served in Montgomery County Schools are nutritious and provide, on the average, one-third of the RDA for all nutrients.
- 5) The meals are economically priced as a result of the 1981 legislative changes and loss in participation.

Significance of Study

The Montgomery County School Lunch Program illustrates how one local school district dealt with the 1981 legislative changes in the NSLP. Due to shrinking resources Montgomery County's program administrators implemented various interventions with the goal of preventing a decrease in participation, while maintaining program objectives. This evaluation determined the effects these interventions had on the program's performance objectives and in the parents' and students' attitudes toward the 1981-82 school lunch program. The results of this research may aid other program administrators to develop the appropriate strategies and tactics to administer successful programs in a period of a dynamic economy.

Overview of the Study

Implementation of the school lunch changes was completed in all seventeen county schools by the end of March 1982. Data collection was conducted between April 22 and May 14, 1982. Randomized cluster sampling techniques were used to obtain representative samples of secondary students and parents of students in the elementary and secondary schools. The survey instruments were administered

in the classroom for the student sample and on the telephone for the parent sample. Data were computer analyzed by using the "Statistical Package for the Social Sciences" (Nie, Hull, Jenkins, Steinbrenner, & Bent, 1975). In summary, the final results demonstrated the extent to which the Montgomery County School Lunch Program achieved its program objectives, as a result of the NSLP's 1981 Omnibus Budget Reconciliation Act.

REVIEW OF LITERATURE

Development of the National School Lunch Program (NSLP)

The need for a school nutrition program was indentified as long ago as World War I. Many young men were physically unfit to serve in the military because they had various deficiencies associated with malnutrition. This raised national concern for the health of America's young people (Martin, 1978). It was not, however, until the mid-1930's that the United States Department of Agriculture (USDA) began distributing food to schools. This was done in part because the USDA needed an outlet for the country's surplus food. It also, however, provided nutritious low-cost meals to children (U. S. Comptroller General, 1977). Despite the fact that a surplus of food existed, the "Great Depression" of the 1930's resulted in widespread malnutrition. As a result of the country's economic condition the nation's people could not afford to buy this food. Therefore, in the 1940's, over half the men reporting for military duty failed the physical examination because of malnutrition (Chun, 1981; Martin, 1978).

By the early 1940's the wartime demands had nearly exhausted the country's food surpluses. As a result the USDA

initiated its first cash assistance program by partially subsidizing schools for local food purchases. By the end of World War II in 1945, these schools were serving approximately four million children. However, the stability of year-to-year government funding was questionable and many schools did not enter the program or expand their existing programs. Ultimately, Congress enacted the National School Lunch Act of 1946 - Public Law (P.L.) 79-396 (U. S. Comptroller General, 1977).

This law authorized the National School Lunch Program (NSLP) in an effort to "safeguard the health and well-being of the Nation's children and to increase the market for nutritious Agricultural Commodities" (Martin, 1978, p. 391). The following school lunch policies were formulated as the basis of the NSLP:

1. School lunches should provide one-third of the children's Recommended Daily Allowance (RDA) as regulated by the Type A meal pattern.
2. Free and reduced-price lunches were provided for children who could not afford to pay the full price for lunch.
3. The program was established to operate on a nonprofit basis.

If the schools instituted these policies they received federal cash and commodity assistance to operate a school

lunch program (U. S. Comptroller General, 1977).

Expansion of the NSLP

In 1962 the first amendment to the 1946 National School Lunch Act was passed. The amendment provided for a more equitable distribution of funds in order to encourage expansion of the NSLP. In addition, special financial assistance was stipulated for schools serving students from impoverished areas (Section 11, P.L. 87-823) but funding did not begin until 1966. In 1966 the Child Nutrition Act (P.L. 89-642) was passed and further amended and expanded the National School Lunch Act. The Special Milk Program which had been operating since 1954 came under the provisions of the Child Nutrition Act. This Act (P.L. 89-642) also established pilot breakfast programs, financial assistance for the purchase of foodservice equipment and additional funds for especially disadvantaged children. The National Programs worked together to provide a national nutrition program which could improve all children's (not only school-age) nutritional status and overall health (Martin, 1978; U. S. Comptroller General, 1977).

In the late sixties the Poor People's March on Washington and the 1969 White House Conference on Food, Nutrition and Health had a tremendous impact on the expansion of

these programs. Numerous legislative amendments during the 1970's demonstrated the interest in and growth of child nutrition programs. A 1970 amendment (P.L. 91-248) mandated that free lunches be served to disadvantaged children. This amendment also provided specific eligibility guidelines for free and reduced-price lunches. Throughout the 1970s, Congress continued to pass legislation that increased funding levels and improved the program (U. S. Comptroller General, 1977).

Until 1975 schools participating in the NSLP were required to serve the Type A lunches which included five food components: meat/meat alternative, bread, vegetable, fruit and milk. These regulations were changed as a result of an increasing concern over the amount of food wasted in the school lunch programs. Jansen and Harper (1978), for example, determined plate waste in twenty-nine elementary and twenty-nine high schools participating in the NSLP. Results indicated that overall food consumption ranged from 55 to 90 percent; therefore, between 10 and 45 percent of the food served was wasted. These researchers also carefully reviewed previous studies which found similar percentages of food waste in both elementary and secondary schools. Subsequent to this study, a 1975 amendment (P.L. 94-105) provided senior high school students the option of accepting three of the five food components comprising the Type A

lunch. This is referred to as the "offer versus serve" provision and if a student chooses this option he/she still pays the full lunch price. It was not until 1978 (P.L. 95-166) that the "offer versus serve" provision was extended to the middle school students. Public Law 94-105 also mandated the service of reduced-price lunches (Sibul & Guthrie, 1980; U. S. Comptroller General, 1977).

The American School Food Service Association (ASFSA), which was also organized in the 1940s, had a large influence on the rapid expansion of the school nutrition programs during the 1970s (Howe, 1979). The spectrum of child nutrition programs at the end of the seventies included: the serving of breakfast, lunch and extra milk to preschoolers and school-age children year round; a nutritional education and training component (P.L. 95-166, passed in 1977) and the serving of breakfast, lunch and dinner in child care programs (Martin, 1978).

Funding of the NSLP

The NSLP is the largest federally funded child feeding program (General Accounting Office, 1982). The total cost of the program has increased from \$100 million in 1946 (Martin, 1980) to \$3.1 billion in 1981 (Schuster, 1982). The program is financed by federal, state and local governments and

children who pay for their lunches. Between 1969 and 1981 the federal share increased from 24 to 56 percent. Since 1969 the state and local shares averaged around 19-21 percent of the total program costs, however, as of 1981 the state and local shared financed 24 percent. The children's payments financed 52 percent in 1969 as compared to 25 percent in 1981. In summary, the federal government has financed an increasing proportion of total program costs, while the children's payments have financed less (Hiemstra, 1977; Hiemstra, 1982).

Participation in the NSLP

The number of schools participating in the NSLP increased from 54,000 in 1950 (U. S. Comptroller General, 1977) to 93,000 in September 1981 (Tougas, 1982). The number of students participating in the NSLP peaked in 1970 at 52.1 million but dropped about 50 percent in 1971. This drop was associated with a decrease in birthrates during the 1960's and therefore a decrease in school enrollment. Other factors, such as the lunch price, the quality or type of food served and the attractiveness of the lunchroom, could have also affected participation (U. S. Comptroller General, 1977). Nevertheless in 1981 there were 27 million students participating in the NSLP (Schuster, 1982).

Student participation in the individual meal-payment programs has also changed over the years. The number of students paying the full price for lunch has declined. In 1971, 17.5 million students paid the full price for lunch and only 13.6 million students paid the full price for lunch between October 1980 and April 1981 (Hiemstra, 1982). The number of students receiving free and reduced-price lunches has, however, increased. In 1971, 7.1 million students received free and reduced-price lunches (U. S. Comptroller General, 1977). As of March 1981 there were 12.9 million students receiving these lunches (Schuster, 1982). Students receiving the reduced-price lunches comprise the smallest percentage of school lunch participants; however, the number of students receiving reduced-price lunches has increased since 1971 (Hiemstra, 1982; Tougas, 1982; U. S. Comptroller General, 1977).

Philosophy of the NSLP

The scope and philosophy of the NSLP was adequately summarized by early school foodservice leaders at the Southern States Work Conference.

"The cafeteria (school lunch program) plays a four-fold role in the educational program of the school. As a source of nourishing meals it helps to combat malnutrition and to maintain in the children health and vigor essential to the success of the teaching program; it is a center for the teaching of proper food selection and

of good health habits, for the vocational training of some students, and for the social training of all; it presents an opportunity for correlating classroom teaching with the interest and experiences of children who center around food; and it furnishes a means of interesting the community in the food service of the school and for giving some training in the nutritional needs of children through this interest" (Martin, 1978, p. 391).

The American Dietetic Association's position on child nutrition programs reinforces the philosophy of the NSLP and the need for such programs.

"An adequately nourished body is essential to physical and emotional health and contributes to readiness for learning. All children need adequate food and educational opportunities to learn good food habits" (Martin, 1978, p. 392).

Benefits of the NSLP

Prior to the establishment of the NSLP a national food consumption survey confirmed the belief that approximately one-third of the nation's people were poorly fed. In 1965, another national food consumption survey concluded that only 50 percent of the households surveyed had good diets, while 21 percent had poor diets. Households from all economic levels lacked needed nutrients (Hamilton & Whitney, 1982). The Ten State National Nutrition Survey (1968-1970) and the Health and Nutrition Examination Survey (1971-74) identified malnutrition in the U. S. population. Vitamin A deficiencies, iron-deficiency anemia and the overconsumption of calories and nutrients were identified as major public

health problems. Overnutrition and inappropriate nutrition are contributing factors in the major causes of death and disability in the United States. Specific nutrition-related diseases prevalent in this country are: coronary heart disease, certain forms of cancer, diabetes and obesity. Dietary practices have demonstrated that "nutrition does affect health, longevity, and the quality of life" (Hamilton & Whitney, 1982, p. 72).

"The NSLP's design was based on the premise that nutritious lunches will safeguard children's health" (U. S. Comptroller General, 1977, p. 11). However, the school lunch alone does not provide a comprehensive health program. The school lunch acts as a nutritional supplement to all children's diets in order to improve their nutritional status and subsequently their health in later years. The USDA established nutritional standards that required schools to serve a Type A lunch which on the average provided one-third of the RDA's for children. The Type A meal pattern is re-evaluated and revised each time the RDA's are revised. The most recent Type A meal patterns (Appendix A) were effective for the 1980-81 academic year. The USDA recommends that schools adjust portion sizes by age/grade group in order to meet the food and nutritional needs of children at different ages. If no portion size adjustments are made the meal pattern for ages 9 and over must be used to satisfy all

requirements ("School lunch patterns," 1980).

Measurements of the school lunch's effectiveness in promoting health is complicated by other health parameters and the fact that many health problems do not become apparent for years. National nutrition surveys have attempted to assess health through nutritional status. The Ten State Nutrition Survey evaluated the nutritional status of the United States population. Even though a representative sample of low-income households was not obtained, the survey did provide information which demonstrated the nutritional benefits of the NSLP. The nutrient intakes of children who did and did not eat the school lunch were compared. The findings are discussed below.

"School lunch programs were found to be a very important part of nourishment for many children. Particularly in low-income-ratio states, school lunches contributed a substantial proportion of the total nutrient intake for many school children. The contribution of school lunch to overall nutrition was particularly important among black children" (U. S. Comptroller General, 1977, p. 27).

The effect of improved nutritional status on overall health was not assessed; however, participation in the NSLP did improve the nutritional status of children.

The nutritional contribution of the NSLP to diets of participants was assessed from the data obtained in the 1977-78 Food Consumption Survey on Low-Income Households. Low-income households were defined as households eligible for the Food Stamp Program. Dietary intakes of 3,700 school

lunch participants and 3,753 nonparticipants, ages 6 to 18 years, were compared. Results indicated that the school lunch contributed 34 to 49 percent of the participants' daily intake for food energy and the nutrients studied. The nutrients studied included: protein, calcium, phosphorus, iron, vitamin A, thiamine, riboflavin, niacin, ascorbic acid, magnesium, vitamins B-6 and B-12. The lunches of nonparticipants contributed only 16 to 23 percent of their daily intake for food energy and the nutrients studied. This demonstrated that, on the average, the participants consumed slightly more than double the amount of food energy and nutrients at lunch than nonparticipants. The average intakes of calcium, iron, magnesium and vitamin B-6, however, were below the RDA for both participants and nonparticipants. The school lunch, however, contributed 30 to 48 percent of the RDA for these nutrients to program participants, whereas the lunch of nonparticipants contributed only 12 to 20 percent of the RDA for these nutrients. This demonstrated that the NSLP provides lunches that improve the nutritional status of its participants (USDA, 1981).

Emmons, Hayes and Call (1972) determined whether children identified as eligible for free lunches were those most in need of the nutritional benefits of the program. Anthropometric and biochemical measurements and dietary recalls were obtained from 844 elementary school children to

determine nutritional status. The children were classified as either nutritionally needy, intermediate or nutritionally adequate. Twice as many free lunch recipients were considered nutritionally needy than nutritionally adequate. Of the children paying the full price for the lunch, or those of the higher economic strata, about half were nutritionally needy and half nutritionally adequate. The results also indicated that the school lunch provided between 15 and 26 percent of the students' daily nutrient intake. The researchers concluded that it was incorrect to assume that economic need is synonymous with nutritional need.

Howe and Vaden (1980) studied 104 male and female students in the tenth and eleventh grade. The nutrient intakes of NSLP participants were compared to those of nonparticipants. The results indicated that participants had better diets than nonparticipants and males consumed more nutrients at lunch than females. Participants met one-third of the RDA for five of the eight nutrients evaluated, while nonparticipants did not meet one-third of the RDA at lunch for calories and the nutrients studied except protein.

The nutritional value of 160 lunches brought from home (sack lunches) was compared with the nutritional value of the Type A lunches. The Type A lunches provided by the NSLP were of greater nutritional value than the sack lunches brought from home (U. S. Comptroller General, 1977).

The economic benefit to participants in the NSLP has been discussed by Hiemstra (1977). In the fiscal year 1976 the average total cost for lunch was \$1.00. The cost to students paying the full price for lunch at that time was, on the average, 58¢. If this student had paid \$1.00 for the average 165 days in attendance the lunch would cost \$165 per academic year. However, at 58¢ per meal for the average 165 days in attendance the cost for lunch per academic year is only \$87. The federal, state, and local governments pay the additional \$77 per year for each child. If the average family has two to three children this involves a \$154 - \$231 savings in the family food budget. The free and reduced-price lunch program provides obvious economic benefits to families who cannot afford to buy the school lunch at the full price.

The nutritional status and health of the nation's children has been an issue of national concern for a long time as reflected by the growth of the NSLP. The benefits of the NSLP to participants have been demonstrated. However, as of the 1980s child nutrition programs have received increased congressional scrutiny. This has been the direct result of the federal administration's eagerness to reduce government spending. As a result the scope and status of the NSLP has changed.

Present Status of NSLP

At the onset of the 1981-82 academic year, the NSLP received a 30 percent reduction in government funding or a \$1.5 billion loss in funds ("Budget cuts challenge," 1981). The Omnibus Budget Reconciliation Act of 1981 (Title VIII of Public Law 97-35) became effective on August 13, 1981. The Act called for the following legislative changes:

1. a reduction in meal reimbursement from 16¢ to 10.5¢ for full price lunches.
2. a reduction in meal reimbursement from 79¢ to 69.25¢ for reduced price lunches.
3. an increase in free lunch reimbursement from 99¢ to \$1.095 as based on the normal indexing in-line with the Consumer Price Index, Food Away From Home.
4. a reduction in USDA commodity entitlements from 16¢ to 11¢ per meal for all lunches.
5. an increase in distribution of "bonus" commodities. These are surplus goods purchased by the USDA and provided to school systems in addition to USDA commodity entitlements.
6. an increase in food commodity assistance to schools receiving only U. S. food commodities.
7. the tightening of eligibility standards for free and reduced-price lunches. Eligibility for free

meals was raised from 125 percent to 130 percent of the income poverty guidelines. Specifically, the yearly income cut-off point was reduced from \$11,520 in 1980 to \$10,990 in 1981. Eligibility for reduced-price meals was raised from 125 percent to 195 percent of the income poverty guidelines to 130 percent to 185 percent. The yearly income cut-off point for reduced-price meals therefore was reduced from \$17,440 in 1980 to \$15,630 in 1981.

8. the requirement that social security numbers of all adult members of households be included on eligibility applications for free and reduced-price lunches. The standard deduction for "hardships," used to compute household incomes on this application form was eliminated. For example, if a family had unusually high medical bills they were able to deduct the average monthly medical cost from their gross family income. The state and local program administrators were encouraged to verify the income claimed; however, a specific requirement for verification was not mandated.
9. the elimination of federal support to private schools charging more than \$1,500 tuition annually per pupil.
10. the elimination of the Federal Non-Food Assistance

Funds which, for example, helped schools buy foodservice equipment.

11. the elimination of federal support for milk service in schools with subsidized meals.
12. the implementation of the following cost-saving regulations:
 - a. cost-based accounting requirements were eliminated.
 - b. elementary schools received the "offer versus serve" provision.
 - c. the states were not required to submit annual operation reports (Antozzi, 1981; "Budget cuts challenge," 1981; Coan (a), 1982; Hiemstra, 1982).

The Deputy Secretary of Agriculture, Richard Lyng, discussed the USDA's stance on the child nutrition budget cuts. He made the following comments: "the government feels that subsidizing the middle and upper class is a prescription to higher inflation;" "the administration feels that budget cuts are equal across the board;" "the new economic plan will, in the end, fully compensate the middle class;" "the tax breaks will put more money in the hands of the parents, who in turn will give it to their children to buy school lunches and....still participate in the program;" "the plan as a package is going to help rejuvenate the nation's

economy;" and "the Administration is absolutely committed to the truly needy and feels that they will be protected....and in times of economic peril, the middle and upper class cannot be subsidized" (Chun, 1981, pp. 50-51). However, many local foodservice administrators were not satisfied with the USDA's reasoning for the extreme cuts in the NSLP. Many of them felt the new policymakers neglected to recognize the well-proven benefits of the NSLP (Becker, 1982).

As a result, many issues have emerged on the perceived effects of the 1981 Omnibus Budget Reconciliation Act. NSLP advocates have expressed the following concerns.

1. A loss of federal cash assistance will cause the price of lunch to increase. Studies have demonstrated that for every penny that school lunch increases, school lunch participation decreases by 1 percent. The cost-volume-profit relationship demonstrates that as the volume of meals decreases the operational costs per meal will increase and therefore the price of the meal will have to increase in order to achieve a break even point (Coltman, 1978). As a result, the price of the lunch would be even greater (Chun, 1981; Martin, 1980; Tougas, 1982).
2. Inflation, rising labor costs and energy costs will enhance the loss of federal cash assistance and

therefore raise the price of lunch even more ("Budget cuts challenge," 1981).

3. Loss of the paying children may make it more difficult for schools to maintain foodservice operations, especially since funds from the paying children contributed, on average, 25 percent of the program costs in fiscal year 1981. If schools are forced to drop out of the program due to the lack of paid participation, many nutritionally needy children would be denied access to a nutritious lunch (Chun, 1981; Martin, 1980; Hiemstra, 1982; "School lunch participation," 1980; Tougas, 1982; Williams, 1980).
4. The program was not devised to be a welfare program, therefore, those children who pay for their lunch should not be eliminated from the program as a result of increased lunch prices. The NSLP's goal is to safeguard the health and well-being of the nation's children, regardless of economic status. Therefore the nutritional basis of the program is in jeopardy (Chun, 1981; Martin, 1980; Schuster, 1982).
5. The elimination of school lunch funds to private schools which charge over \$1,500 in annual tuition prevents participation of children who may be

nutritionally needy. Studies have shown that middle and upper class children may have poor or inadequate diets. Therefore, even though these children are not economically needy they may indeed be nutritionally needy and derive benefits from the nutritional provisions of the NSLP (Chun, 1981).

6. The elimination of Non-Food Assistance Funds will prevent schools from buying the equipment necessary to continue or commence school lunch programs. In recent years, the cost of foodservice equipment has increased at a rate approaching 20 percent annually (Chun, 1981; Olsen, 1983).
7. Alternative foodservice programs, such as the service of fast foods and a la carte food items, and the implementation of the "offer versus serve" provision in elementary schools threatens the nutritional integrity of the school lunch program. Foodservice administrators believe that the nutritional value of these programs would be lower than that provided by the Type A lunch. For example, frequent consumption of fast foods may contribute an excess amount of calories, fat and sodium to the diet. Also, they believed that children may not be capable of making adequate nutritional choices from the a la carte program and offer versus serve

program, especially at the elementary level ("Offer versus serve," 1982; Tougas, 1982).

8. The 1981 eligibility applications for free and reduced-price lunches required that social security numbers of all household members be included. As a result, program administrators felt the forms were long and complicated and discouraged families from applying (Becker, 1982; Tougas, 1982).
9. The unscheduled delivery of bonus commodities only complicates and prevents the appropriate meal and operational planning; therefore, cash in lieu of commodities was preferred by program administrators (Coan (a), 1982).
10. The budget for child nutrition programs constitutes eight-tenths of one percent of the entire national budget. Child nutrition programs are therefore receiving a disproportionate share of the federal budget cuts (Chun, 1981).
11. The budget cuts in child nutrition programs will adversely affect the economy because for every 100 meals lost, one job is lost. As a result the unemployment lines will increase and more people will draw unemployment compensation and receive welfare payments. In addition, this loss in participation would greatly affect the amount of

food bought in the economy by increasing the food supply and decreasing the demand (Martin, 1980).

Hiemstra (1982) discussed the impact of the 1981 legislative changes on the number of schools and individuals participating in the NSLP and also its impact on the cost of the school lunch. In October 1980, 92,926 schools participated in the NSLP, but only 91,204 participated as of October, 1981. This demonstrated a drop of 1,722 schools (or 1.85%) from the NSLP after implementation of the 1981 legislative changes. Whether this drop can be totally attributed to the 1981 program changes is questionable because of data comparability problems; for example, during this period schools closed and new schools opened, some schools consolidated and others redefined their schools. Also some changes due to declining enrollments and moves to satellite operations could have occurred. Hiemstra also estimated that approximately 1,000 private schools had dropped from the program between October 1980 and October 1981. The average price for the full price lunch increased from 63¢ to 81¢, an increase of 26 percent. Reduced-price lunches increased an average of 200 percent or an increase of 12¢ to 36¢. Hiemstra (1982) reported that previous studies have shown that a 10 percent increase in paid lunch prices is associated with an immediate decrease in participation of 6 percent, indicating a relatively elastic price-demand

relationship. Over time participation may increase about half of the loss. The following participation figures for the 1980-81 and 1981-82 academic years were obtained between October and April of both years. During the 1980-81 academic year 26.4 million children participated in the NSLP as compared to 23.3 million children during the 1981-82 academic year. This represented a 13 percent decline in student participation after implementation of the 1981 legislative changes. Again, other program and environmental factors could have contributed to this drop in participation. Becker (1982) emphasized that the number of children receiving free lunches did not reappear in the number of children receiving reduced-price lunches. In other words, the number of recipients of reduced-price lunches also decreased. Becker felt the new application forms were long and complicated and therefore discouraged parents from applying for free and reduced-price lunches. This was another effect of the 1981 legislative changes.

The total impact of the 1981 Omnibus Budget Reconciliation Act has not yet been fully assessed. Implications of its effects are being expressed by local foodservice administrators. Therefore, an understanding of the factors that affect participation is necessary in order to maximize participation in the NSLP.

Factors Affecting Participation in the NSLP

Food Acceptance. The acceptance of foods served in a school foodservice program affects student participation. Social scientists have suggested that nutritional knowledge and attitudes influence food behavior or the acceptance of foods (Grotkowski & Sims, 1978). Litman, Cooney and Stief (1964) identified the influence of food habits on food behaviors. Food habits are defined as "the ways in which individuals, or groups of individuals, in response to social and cultural pressures, select, consume and utilize portions of the available food supply" (Litman et al., 1964, p. 433). Children's food habits are formed early in life and are inter-related with family relationships, traditions, values and norms of his/her culture. Therefore, food habits also determine which foods children will accept and consume. Foley, Hertzler and Anderson (1979) cited that food habits also indicate attitudes.

The relationship between nutritional knowledge, attitudes, food habits and food behaviors is not clearly understood. Students' acceptance of the foods served in a school foodservice program, however, is influenced by this relationship and in turn affects student participation in the NSLP. The following subtopics will further explain the interrelated factors affecting the acceptance of foods and

participation in the NSLP.

School Policies. Various school policies have affected school lunch participation. Student involvement in the menu planning process has demonstrated improved student attitudes toward the school foodservice program and has also resulted in an increase in participation. Garrett and Vaden (1978) demonstrated the effect student-selected menus had on student attitudes, school lunch participation and food consumption. Student-selected menus were devised from students' food and menu preferences. Data on student attitudes, participation and plate waste were obtained before and after implementation of the student-selected menus. Data were also collected from a control group. The average daily participation increased significantly when student-selected menus were used and plate waste also decreased significantly. Student attitudes were assessed by food and nonfood aspects of the school lunch and cafeteria. There was a positive change in students' attitudes toward the school lunch program when the student-selected menus were implemented.

Howe (1979) studied attitudes of 104 tenth and eleventh grade students toward the school lunch program and the factors which affected participation. Half of these students were classified as participants in the NSLP because they ate a school lunch three to five times per week. The remainder

was classified as non-participants because they ate a school lunch less than three times per week. Approximately 93 percent of the non-participants and 87.5 percent of the participants indicated that they would eat a school lunch more frequently if the foods they indicated they liked were served.

Balintfy, Rumph and Sinha (1980) developed preference-maximized menus by using a quadratic programming model. This program took into consideration students' food preference and frequency data; the Type A menu pattern nutritional requirements; costs and other operational constraints such as the food budget, production limitations and the structure of courses. The menus were implemented in two schools intermittently for three months in two schools in order to test the effect these menus had on school lunch participation and food consumption. A double blind experiment was designed so neither the foodservice personnel nor the students were aware of when the new menus were being served. On the days that the preference-maximized menus were used participation increased between 1 and 9.7 percent. The school which already had a high percentage of participation (83 percent) had less of an increase in participation and this accounts for this wide variance. Food consumption increased by 3.1 percent to 10.3 percent and plate waste decreased by about 6 to 24 percent when the preference-

maximized menus were served. The authors stated that these wide variances were the result of difficulties in controlling portion sizes. However, participation and the amount of food consumed were both increased as a result of serving the specific menu items that the students preferred.

School lunch participation has been affected by whether the students are permitted to leave the school grounds during the lunch period. This is commonly referred to as the open-versus closed-campus policy. Grant (1969) assessed the attitudes of 464 tenth grade students and their parents toward the school lunch programs. The majority of students said they ate in the school cafeteria because they could not leave the school grounds.

Doucette (1971) discussed research which assessed the attitudes of tenth, eleventh and twelfth grade students toward their school's foodservice program. The results indicated that 69 percent of the students would eat a school lunch less frequently if they had an open-campus policy.

Law, Lewis, Grant and Bachemin (1972) surveyed 464 tenth grade students to assess attitudes about the school foodservice program. Students most frequently mentioned that the primary reason they ate a school lunch was that they could not leave the school grounds during the lunch period. The researchers attributed the large school lunch participation to the fact that 13 of the 16 schools in the

study had a closed-campus policy during the lunch periods.

The USDA (1980) surveyed a representative sample of 625 schools throughout the nation in order to determine what factors influenced student participation in the NSLP. The results indicated that if students were allowed to leave the school premises during the lunch period, participation decreased, thereby concluding that a closed-campus policy resulted in increased school lunch participation. This same study found that the length of the school day affected participation. School systems with longer school days were more likely to have higher school lunch participation. The length of the lunch period did not significantly affect student lunch participation in this study.

A previous USDA study of participation by high school students in the NSLP found that lunch periods ranged from 23 to 40 minutes. Participation in the NSLP was less in schools having shorter lunch periods because students skipped lunch or bought a quick snack from an a la carte lunch line (U.S. Comptroller General, 1977).

Harper, Mackin, Sjogren and Jansen (1980) evaluated students' school lunch satisfaction with regard to four attributes: food, time, environment and personnel involved with the school lunch program. The majority of the students said that the time available to eat lunch was too short. "The frequency with which students ate lunch correlated with

their attitudes toward the time available for serving and eating school lunch" (Harper, Mackin, Sjogren & Jansen, 1980, p. 285).

Akin, Guilkey, Popkin, Bass and Haines (1981) analyzed previous research that identified factors affecting school lunch participation. Their review indicated that the length of the lunch period did affect meal acceptability. If students perceived that there was not sufficient time to eat lunch they did not participate in the program. In addition, schools that involved students in menu planning and also published their menus had greater school lunch participation. The availability or proximity of vending machines, off-campus restaurants, and students' homes also decreased participation in the school lunch program. However, the USDA (1980) revealed that the availability of vending machines did not significantly affect student lunch participation, but that the availability of on-campus snack bars decreased participation in the NSLP.

Meal Preparation and Service. Law et al. (1972) found that one of the main reasons given by students for not eating a school lunch was that they did not like to wait in line. A USDA study of high school participation in the school lunch program found that over 50 percent of the students thought the lunch line was too long and they did not have time to enjoy lunch (U. S. Comptroller General,

1977). Therefore, the design of the facility is important in the school lunch program in order to promote easy service and a steady flow of people.

The U.S. Comptroller General's report (1977) also indicated that the majority of schools with high participation did more way of merchandising lunches than schools with low participation. Merchandising efforts reported involved attractive serving and displaying of food (for example, garnishing) and making the foods easily accessible (U.S. Comptroller General, 1977).

Harper, Mackin, Sjogren and Jansen (1980) reported that students disliked roominess and noise in the cafeteria. Students who ate a school lunch more frequently had more positive attitudes toward the environmental factors affecting school lunch. Attitudes toward school foodservice personnel were also more positive among frequent school lunch participants. Akin et al. (1981) also identified studies which demonstrated a decrease in participation when cafeteria dining rooms were considered to be crowded, noisy and dirty.

Grant (1969) reported that students and parents felt the reason students ate off-campus or brought a lunch from home was that the food was better than that served at school. The researcher also compared students' likes and dislikes of a variety of foods served both at home and at

school. All foods were liked by more students when served at home than at school. The majority of students who did not eat a school lunch stated that the food was poorly prepared and unattractive in appearance. Students who obtained a school lunch but left food uneaten reported that they disliked the way the food was prepared and they disliked the food. Parents thought the school lunch program could be improved by better food preparation, larger portions on request, greater variety of food items and better quality food.

Law et al. (1972) found that the main reason given by students who did not finish their school lunch was that they did not like the way the food was prepared. Complaints about the way the food was prepared included: cold food, limp salads, too much or too little seasoning and under- or over-cooked foods. The second reason given by students who did not finish their school lunch was that they disliked the food.

Howe (1979) reported that 50 percent of the students did not buy a school lunch for reasons related to the food and the crowded cafeteria dining room conditions. The main reason students bought the school lunch was that they liked the food. More school lunch participants than non-participants felt the quality of the food was good. Twice as many nonparticipants than participants stated they dislike the

foods served at school for reasons related to quality, preparation, variety, taste and the appearance of the food. Students suggested that improved food preparation and using higher quality raw materials would improve the school lunch.

The quality of the food served has affected school lunch participation and has been measured in terms of the place the food is produced, for example, whether the food is prepared on-site or at satellite operations. The USDA (1980) reported that participation was significantly higher when meals were prepared at school (or on-site) as compared to meals prepared outside of the school (or at satellite operations).

Lilly, Davis, Wilkening and Shank (1980) reported the findings of a USDA pilot study. Its purpose was to determine the effects of the type of food service system on plate waste and the nutritional characteristics of the school lunches. The sample consisted of elementary and secondary schools with an equal number of schools with on-site preparation and satellite operations. The researchers reported that schools serving lunches prepared on-site had significantly higher rates of participation than schools serving preportioned lunches from satellite operations.

Availability of Food Choices. Grant (1969) studied students' attitudes toward school lunch program offering one or more menu patterns. Results indicated that participation

in the school lunch program was higher in schools that offered a selective menu than in the schools where only one menu pattern was offered. Also, in the schools that offered a selective menu, a larger number of students said they ate in the cafeteria because the food was well prepared as compared to schools that offered a non-selective menu. Students in schools offering only a non-selective menu more frequently reported that the reason they ate off-campus was that they liked a choice of foods. Law et al. (1972) reported that students who were offered a selective menu ate a school lunch more often than those who were offered a non-selective menu.

Howe (1979) reported that one of the main reasons students liked to eat lunch in other places was that they did not have to spend money on food items they did not want. Students frequently selected the Type A school lunch from the snack bar at school because they were able to select the specific menu items they wanted. Students selected the Type A lunch from the salad bar because they were dieting; they did not eat meat; they were able to make their own combination and they liked a light lunch.

The Food and Nutrition Service was interested in finding ways to increase the acceptability of meals served in order to increase student participation and reduce plate waste. The Type A offer versus serve lunch pattern was

compared to three alternate meal patterns which included: the Type A lunch without the offer versus serve provision; the Basic 4 lunch in which children selected from the Basic 4 food groups; and a free-choice lunch in which students had a choice (within quantity limits) of a la carte food items. Data were collected from 48 high schools throughout the nation in order to compare the alternative menu patterns effect on a variety of factors. The following results were obtained: participation increased when free-choice lunches were served, thereby reducing per-meal labor and total-meal costs; plate waste was reduced significantly when free-choice lunches were offered; students preferred the free-choice lunches the most and the Type A lunch without the offer versus serve provision the least (Harper, Mackin, Sjogren, & Jansen, 1980; Harper, Shigetomi, Mackin, Iyer, & Jansen, 1980; Jansen, Shigetomi, Iyer, Mackin, & Harper, 1980).

Offering students a greater selection of foods has increased participation. School districts have added fast-food menus which offer a choice each day of fast-food combinations and a salad bar. Others have expanded the number of food choices served in the conventional menu. Student participation rates were recorded in three school districts before and after implementation of additional meal choices and the participation rates increased from 7 to 18

percentage points within a three to four year period (U.S. Comptroller General, 1981).

Meal Cost. Grant (1969) found that most parents of students participating and non-participating in the NSLP felt the price of a school lunch was a good value or about right. Therefore, the price of lunch did not affect participation. Law et al. (1972) also reported that according to parents the price of lunch did not affect school lunch participation. The average price for lunch in both studies was 29 cents if a choice of food was offered and 25 cents if no choices were offered.

In 1973, the relationship between the price and the rate of daily participation in the United States indicated that the higher the child's payment, the lower the level of participation. The price-participation relationship indicated that a 5-cent price increase was associated with a decline of 3.1 and 7.6 percentage points in the daily participation rate. The interpretation of the squared correlation coefficient determined that price alone explained 38.9 percent of the variation in the U.S. participation rates (U.S. Comptroller General, 1977).

The U.S. Comptroller General's Report (1977) also pointed out that "it is not the price of the NSLP lunch per se, but rather its price relative to alternatives that affects student participation" (p. 93). The report cited a

1973 study that tested four sack lunches which met one-third the RDA, as do the Type A lunches served in the NSLP. The food cost of the sack lunches ranged from 26 to 41 cents, which was comparable to the NSLP's lunch price of 25 to 40 cents. These sampled lunches, however, were not necessarily representative of the cost or content of sack lunches brought from home.

Howe (1979) reported that over 80 percent of participants and 75 percent of non-participants believed that the price of a school lunch was perceived as a good value or about right. A higher percentage of non-participants than participants indicated that the price was too high. Students paid between 65 and 99 cents for a school lunch at that time.

The USDA (1980) study concerning factors influencing participation in the school breakfast program also examined the school lunch program. Results also demonstrated that students paying the full price for lunch participated more when the price was lower. This relationship was significant at the 99 percent confidence level, $\alpha = .001$.

Akin et al. (1981) listed the following cost variables as factors which affected reported participation from previous studies: meal cost, prices of alternative food choices and eligibility for free or reduced-priced meals.

Simple certification procedures and the anonymity of children receiving free or reduced-price lunches were believed to be indirectly related to participation. Akin et al. (1981) reported a multivariate analysis on a representative sample of low-income children in the U.S. Statistically significant ($p=.10$) results indicated that participation increased when free and reduced-price lunches were available.

Attitudes of Students. Satisfaction with the operational factors affecting school lunch participation have been described by students' attitudes. However, attitudes unrelated to the operational factors of the program have also been studied. Grant (1969) reported that one of the main reasons students ate in a school cafeteria was that their friends did. Students also stated that they ate in a school cafeteria because their parents wanted them to. Students did not eat a school lunch because they did not like to eat lunch or because they usually ate a snack or were not hungry.

Doucette (1971) reported that 41 percent of the students ate the school lunch because they felt it was good for them. The schools were compared by an overall school rating (based on a 5-point scale). The results demonstrated that the schools rated the highest on the scale had the lowest participation and those rated the lowest had the

highest participation. "School lunch administrators and cafeteria managers often equate high participation rates with favorable student attitudes" (Doucette, 1971, p. 43); however, this was not the case. Another result was that 51 percent of the students said that students would complain about school lunch regardless of any changes made. Reasons for not participating in a school lunch program were that they were dieting, taking part in other noon-time activities and saving money.

Law et al. (1972) also found that one of the main reasons given by students who did not eat a school lunch was that they did not like to eat lunch. The main reason given by students who liked to eat lunch at school was that it was a time for them to talk with their friends.

Howe (1979) found that a larger percentage of non-participants than participants skipped lunch. Students said they skipped lunch because they were not hungry, they had to study, or they had to run errands. However, students bought the school lunch when they were hungry and the menu sounded appealing. Participants and non-participants (students that ate less than three times a week) both reported that they participated in a school lunch program because it was convenient. Another main reason they ate a school lunch was that it provided an opportunity to talk with their friends. More non-participants than participants

stated that the nutritional content of the school lunch was poor; however, both groups felt the meals off-campus were of poor nutritional content.

Attitudes of Parents and School Personnel. Attitudes of parents and teachers are important to consider because "children's attitudes are related to the attitudes held by significant adults, including parents, teachers, and those in a family group" (Klausmeier & Repple, 1971). Grant (1969) reported that 86 percent of the parents surveyed wanted their children to eat a school lunch for the following main reasons: it provided a hot meal each day, it was good for his/her health, and it was cheaper than eating elsewhere. The main reason parents did not want their children to participate in a school lunch program was that their children did not like to eat in the school cafeteria.

Printiss (1970) studied factors which influenced senior high school students' participation in the NSLP. Results indicated that as the manager's opinion of the extent of acceptance of school lunch became more positive, participation increased. Furthermore, as the principal's opinion of food served became more positive, participation increased.

Law et al. (1972) surveyed 369 parents of tenth grade students in order to examine parents' attitudes toward the school lunch program. Most parents wanted their children to eat a school lunch because it provided a hot meal and was

good for their health.

Howe (1979) found that over 63 percent of participants and 44.2 percent of non-participants indicated that their parents influenced them to participate in the school lunch program. Over 78 percent of the participants and 38.4 percent of the non-participants indicated that their best friends ate the school lunch. However, more non-participants than participants felt their friends influenced their participation in the school lunch program.

Perkins, Roach and Allen (1980) studied whether student participation could be predicted by teachers' attitudes. Students participated more when their teachers felt the quality of food prepared was of good quality and when their teachers were less resistant about eating lunch with their students. These results were significant participation predictors at the 0.10 level.

The U.S. Comptroller General's Report (1977) also found that teachers', school administrators', and workers' attitudes toward the quality of food prepared affected participation. Akin et al. (1981) reviewed research which indicated that the amount of time parents had or their willingness to prepare a bag lunch at home affected school lunch participation.

Additional Factors. The U.S. Comptroller General's Report (1977) explained that by combining several factors

that affect participation a cause-effect relationship could be developed to explain the major reasons why children do or do not participate in the NSLP. Researchers used a regression equation to express the regular-price participation as a function of per capita income and price. The combination of price and income explained 55.7 percent of the variation between State participation rates. Since their coefficients were negative an increase in either would tend to lower participation rates. This relationship could be expanded to include a number of factors. The researchers feel multifactor relationships could determine the nature and importance of the major factors affecting participation. It could also provide a reliable basis for estimating the participation impacts of various program modifications.

The USDA (1980) indicated that economic need and grade level affected student participation in the NSLP. More students participated in economically needy schools than non-needy schools. Students in the elementary grades participated more frequently than students in the secondary grades. Lilly et al. (1980) also found that the rate of student participation was significantly greater at the elementary grade level than at the secondary level.

Perkins et al. (1980) studied whether student participation could be predicted by grade level, the degree of bussing, the percent of students receiving free and reduced-

price meals and the percent of students with working mothers. Significant participation predictors at the 0.10 level included an increase in participation with an increase in the percent of bussing students and the percent of students receiving free and reduced-price meals.

Various personal, regional and household characteristics were determined by Akin et al. (1981) to have a large and statistically significant effect on individual participation rates. The results are discussed below.

1. Added income reduced the probability of participation.
2. Nonwhites were more likely to participate than whites.
3. Young children (ages 6 to 11) were less likely to participate if their mothers worked than older children (ages 12 to 18).
4. Older children with one parent (usually the mother) were less likely to participate than younger children.
5. Younger children were more likely to participate than older children.
6. Southerners were more likely to participate than Northerners.

The effects of sex and location (urban or rural) were small and had an insignificant effect on participation.

Attitudes toward the school lunch program have been studied in order to create more favorable attitudes toward program components. Positive attitudes have been demonstrated to increase participation. Head, Giesbrecht and Johnson (a, 1981) measured the attitudes of elementary and secondary public school-age students toward the school lunch program. Results indicated that elementary students had more positive attitudes toward the school lunch than secondary students. Female students rated the school lunch less favorably than the male students at the secondary level, but at the elementary level female students rated the school lunch more favorably than the male students. The researchers attribute this finding to the fact that females are more weight conscious during adolescence and therefore have "more stringent criteria for food selection" (Head et al. (a), 1981, p. 21). Findings also reported that all grade levels had more negative attitudes toward the school lunch late in the school year (April) than early in the school year (October).

Head, Giesbrecht and Johnson (b, 1981) also compared the attitudes of elementary and secondary school children toward school lunch by race and school lunch paying status. The results indicated that black students had more positive attitudes toward the school lunch than white students. Students who received free lunches had more positive

attitudes toward the school foodservice program than students who paid the full price for lunches.

Administrative Responses to 1981 NSLP Legislation

School foodservice administrators have implemented a wide variety of program alternatives in order to maintain or expand their local school lunch programs. Modifications and strategies were attempted in an effort to counteract the effects of the 1981 Omnibus Budget Reconciliation Act. The main concern of school foodservice administrators was that an increase in the price of the lunch would result in decreased participation. Nevertheless, the full price for lunch was increased, on the average, 18¢ or 29 percent and the reduced-price lunch was increased, on the average, 24¢ or 200 percent (Hiemstra, 1982).

The following strategies and modifications were suggested and implemented by school foodservice administrators.

1. Needs assessments, food preference studies and taste testing parties were conducted in order to identify what foods students preferred (Applebaum, 1982; "Combat inflation," 1981; McConnell, 1981; Simpson, 1981).
2. Students' and parents' attitudes about the school lunch program were assessed and also suggestions

- for program improvements were sought from students, parents, school lunch workers, teachers and school administrators (Applebaum, 1982; Bayer, 1981; Boyd & Halfacre, 1982; Simpson, 1981).
3. Students were involved in menu planning and parents were also invited to participate in the school lunch program (Bayer, 1981; Boyd et al., 1982; "Merchandising generates," 1981; VanEgmond-Pannell, 1981).
 4. Popular food items were served more frequently, for example, fast foods such as pizza, tacos, hot and cold sandwiches, salads and french fries (Coan (b), 1982; "Combat inflation," 1981; McConnell, 1981; Schuster, 1982; VanEgmond-Pannell, 1981; "When nutrition," 1981).
 5. More menu choices were offered and a la carte food sales were implemented or increased. However, some school foodservice administrators decreased the number of menu choices and the variety of choices (Bayer, 1981; "Budget cuts challenges," 1981; "Combat inflation," 1981; Hume, 1982; "Prices down," 1982; Schuster, 1982; Tougas, 1982).
 6. Desserts were taken off the Type A tray and sold separately or a la carte (Bayer, 1981; "Budget cuts challenge," 1981; Schuster, 1982; VanEgmond-

- Pannell, 1981).
7. Portion sizes were reduced or more tightly controlled. However, some school foodservice administrators increased portion sizes and charged higher prices (Bayer, 1981; "Combat inflation," 1981; Hume, 1982; VanEgmond-Pannell, 1981).
 8. Food preparation methods and service were improved, for example, foods were more carefully seasoned and made more visually appealing; the food service line was enlarged and the service was made faster ("Budget cuts challenge," 1981; VanEgmond-Pannell, 1981).
 9. Less expensive foods were purchased, for example, low-cost protein components such as texturized-vegetable protein ("Combat inflation," 1981; Hume, 1982).
 10. Partially or totally prepared convenience foods were purchased to decrease labor costs ("Combat inflation," 1981).
 11. The labor force was reduced or revised in order to decrease labor costs, for example, more part-time employees and fewer full-time employees were utilized (Bayer, 1981; "Hard facts help," 1982; "Prices down," 1982; Schuster, 1982; Tougas, 1982; VanEgmond-Pannell, 1981).

12. Administrators pushed for greater productivity and adhered strictly to budget allotments (Hume, 1982).
13. Processing contracts were utilized and administrators also pursued joint contracts with other schools and programs to bring in extra income (Bayer, 1981; "Budget cuts challenge, 1981; "Combat inflation," 1981).
14. The decor or atmosphere of the cafeteria was changed ("Budget cuts challenge, 1981; VanEgmond-Pannell, 1981; "When nutrition," 1981).
15. Attractions, gimmicks and promotions were used to improve food merchandising efforts (Appelbaum, 1982; Bayer, 1981; Boyd et al., 1982; "Budget cuts challenge, 1981; Coan (b), 1982; "Combat inflation," 1981; "Hard facts help," 1982; Madlin, 1982; Tougas, 1982; VanEgmond-Pannell, 1981; Yoder, 1981).
16. Information about the school lunch program was promoted through the local radio and television stations, student and local newspapers and Parent-Teacher Associations' newsletters (Appelbaum, 1982; Bayer, 1981; Boyd et al., 1982; "Combat inflation," 1981; Simpson, 1981).

The effects of these program strategies and tactical modifications have not been fully assessed. Various school

foodservice administrators have, however, postulated the effects of their efforts. For example, many schools have implemented self-serve salad bars. School foodservice administrators have reported the following increases in program participation in their school districts: 67 to 83 percent in Massachusetts, 17 percent in Florida and 200 percent in California. The successes were attributed to the implementation of the salad bars because self-service lowers the price of the lunch and the students like having the option to choose. Both of these factors have been found to increase participation (Miller and Watkins, 1980). Another example is a vocational technical school which built a McDonalds within the school walls. The McDonalds operation is in competition with the NSLP operation. During the first few weeks of operation participation was 20 percent in the NSLP and 80 percent in McDonalds. However, the initial participation figures, Keane (1982) attributed to the novelty of the fast food operation.

The NSLP was established in 1946 in order to improve the health of all children regardless of economic status. Program participants have received both nutritional and economic benefits; however, the extent to which these benefits are received depends on the degree of student participation. The Omnibus Budget Reconciliation Act of 1981 decreased federal support for the NSLP by 15 percent. School

foodservice administrators' immediate concern was that the resulting increased lunch prices would decrease participation and jeopardize program objectives. Therefore, program administrators have attempted to deal with shrinking resources, attain program objectives and maintain program participation. Previous research studies have identified those factors which affect program participation. As a result, a number of program strategies have been attempted, for example, improved food preparation methods and more frequent service of the foods students prefer. The effects of the 1981 budget cuts and new program interventions have not been fully assessed and therefore program evaluations are necessary to help school foodservice administrators make future program decisions.

METHODOLOGY

The 15 percent decrease in federal spending for the NSLP, which resulted from the 1981 Omnibus Budget Reconciliation Act forced school food service administrators to reassess their programs. Accurate answers to the following questions were needed in order to make appropriate program decisions. Was the program meeting its objectives? What program strategies or practices needed to be continued or discontinued, expanded or cut back, or perhaps redirected? The purpose of evaluations is to aid in the planning, development and successful operation of programs (Suchman, 1967; Weiss, 1972).

The purpose of this evaluation study was to report how the administrators of the Montgomery County School Lunch Program responded to the 1981-82 federal budget cuts and what impact their actions had on the stated program performance objectives as well as reporting on the attitudes of the parents and students toward the county school lunch program. Data collection was conducted between April 22, and May 14, 1982. Randomized cluster sampling techniques were used to obtain representative samples of secondary students and parents of students in the elementary and secondary schools. Two survey instruments were developed and

administered in the classroom to the student sample and on the telephone to the parent sample. Data were computer analyzed by using the Statistical Package for the Social Sciences (Nie et al., 1975).

Site of Study

The following program conditions and activities explain the background of the Montgomery County School Lunch Program within which the research design was developed. In response the 1981-82 proposed federal budget cuts the school food-service's administrators in Montgomery County developed and implemented a school lunch survey during the 1980-81 academic year. Their major concern, prior to the 1981 legislative changes, was how to maximize school lunch participation without sacrificing the nutritional integrity of the program (Appendix A). The survey instruments involved a food preference and frequency questionnaire which was administered to both elementary and secondary students. In addition, the secondary students were also asked questions regarding: the frequency in which they participated in the program; their lunch practices; their reasons for non-participation in the program; ways in which the program could be improved; and their perceptions about the price and service of fast food items.

Survey results were crosstabulated by school, grade and sex; however, only the cumulative sample results are reported here. Results of the questions administered only to the secondary students' sample indicated that:

1. 60 percent ate lunch every day, while 20 percent ate lunch two days a week or less.
2. 37 percent skipped lunch altogether on the days they did not purchase a school lunch and only 18 percent brought a bag lunch from home.
3. 50 percent did not purchase a school lunch because they did not like what was on the menu.
4. in addition the students did not purchase a school lunch for the following reasons:
 - a. the lunch was not big enough for their appetite (12%)
 - b. the price was too high (11%)
 - c. there was not enough time to eat (8%)
 - d. they had to buy the whole tray (8%)
 - e. the lunch lines were too long (4%)
 - f. they would rather socialize than eat lunch (3%)
 - g. the cafeteria tables were too messy (2%)
 - h. there was no place to sit in the cafeteria (1%)
5. 35 percent felt the school lunch program could be improved by having an a la carte menu.
6. 33 percent felt the school lunch program could be

improved by having longer lunch periods.

7. 28 percent felt a greater selection of foods was necessary.
8. 43 percent wanted foods served that were similar to those served in their favorite fast food restaurant; however, about 50 percent said they would not pay the same price the restaurant charged.

Results of the food preference and frequency questionnaires were different for elementary and secondary schools. Table 1 represents the most preferred entree, vegetable, and fruit dishes for the elementary and secondary students. These foods also scored the highest on the frequency questionnaire which indicated that the students preferred to have these items served more often. The top twenty items in each category were used by school foodservice administrators in the development of subsequent menus.

As a result of the survey the following lunch program changes were implemented.

1. Elementary students had food choices in the Type A lunch pattern which included: 2 entrees and a combination of 2 vegetables and/or fruits on a daily basis.
2. The secondary students had more food choices in the Type A lunch pattern which included: 3 or more

Table 1 - MENU ITEMS MOST PREFERRED BY STUDENTS

Food Category	Elementary Students	Secondary Students
Entrees	sausage pizza	sausage pizza
	hot dog/chili	hamburger/bun, dill, chips
	oven fried chicken	hot roast beef sandwich
	hamburger/bun, dill, chips	hamburger/bun, tomato
	hot dog/bun	cheeseburger/bun
Vegetables	french fries	french fries
	tator tots	tator tots
	carrot sticks	mashed potatoes
	mashed potatoes	tossed salad
	lettuce salad	cucumber sticks
Fruits	cherry apple juice bar	frozen strawberries
	orange juice freezie	pineapple chunks
	apple wedges	pach slices
	banana	pear halves
	orange wedges	orange juice freezie

entrees (including a self-serve salad bar) and a combination of 4 or more fruits and vegetables on a daily basis.

3. Elementary and secondary school cafeterias served those foods the students preferred, more frequently. The menu items served at the elementary and secondary schools did vary according to the survey results.
4. The two largest high schools with previously low participation records had the option of selling a la carte food items in addition to the Type A lunch. This option was used as a pilot test before implementation in the other schools.

School foodservice administrators felt these changes in menu offerings would enhance student participation and help achieve program objectives. However, the 1981 Omnibus Budget Reconciliation Act took effect on August 13, 1981, and made the following changes necessary in order to meet the operation's self-supporting budget.

1. A 25 percent increase for the full-price Type A lunch; the elementary schools lunch price went from 60¢ to 75¢ and the secondary schools lunch price went from 65¢ to 80¢.
2. A 100 percent increase for the reduced-price Type A lunch; both elementary and secondary schools

- reduced-price lunch went from 20¢ to 40¢.
3. A 150 percent increase in the price of milk purchased separately from the Type A lunch; both elementary and secondary schools milk price went from 8¢ a half pint to 20¢ a half pint.
 4. Desserts, other than fruit, were no longer included in the price of the Type A lunch. A variety of desserts were offered but they had to be purchased separately from the Type A lunch in both elementary and secondary schools.
 5. Self-serve condiment pumps replaced portion-controlled condiment packages in the secondary schools.
 6. They used more convenience food items in all schools. These changes were intended to reduce labor costs.
 7. Staff adjustments were made to accomodate fewer students eating and changes in meal production and serving requirements; for example, program administrators created more part-time and fewer full-time positions in order to have more flexibility in meeting daily production and serving schedules.
 8. Funds for equipment replacement were included in the budget since Montgomery County had only 9 schools (of the 17 schools) qualify for the Non-

Food Assistance Funds. In order to qualify, the school had to serve 30 percent free and reduced-price meals.

The above changes were implemented at the beginning of the 1981-82 academic year in all county schools, with the exception of the new choices in menus. Menu choices were phased in on a school-by-school basis between September 1981 and March 1982 in order to allow school foodservice administrators to implement the menu changes more smoothly.

The following program characteristics provide a complete picture of the 1981-82 school lunch program in Montgomery County.

1. It was a centralized food service operation administered by the Program Director and Food-service Dietitian.
2. Meals were prepared at on-site kitchens in each school.
3. All schools, except for the two larger high schools, had closed campuses, which means students could not leave school grounds for lunch.
4. All secondary schools had the "offer versus serve" provision. This had not been implemented in the elementary schools.
5. Portion sizes were adjusted by age/grade group as recommended by the USDA in 1980 (School lunch

- patterns, 1980). However, larger portions than recommended were given on many entree items.
6. The two larger high schools had vending machines; however, they were closed until after the last lunch period, which was about 1:15 pm.
 7. Teachers provided discipline in the cafeteria dining room under the direction of the individual school principal.
 8. The average school day was between 8:30 am and 3:00 pm, with lunch breaks between 11:15 am and 1:45 pm. The students had 22 to 30 minute lunch breaks.
 9. Menus were published in the local newspapers once per week and daily on the local radio stations. These advertisements included the lunch choices at both the elementary and secondary schools. Also, the schools varied as to when, where and how they posted the menus in the schools.
 10. Based on daily student lunch participation figures for the past 3 academic years (1978-79, 1979-80, 1980-81) the county as a whole served: 71 percent full-price lunches, 7 percent reduced-price lunches, and 22 percent free lunches. Eligibility standards for these meal programs followed the federal regulations.

This research study was implemented after approval of

the research design by the Montgomery County Schools' Superintendent. The letter written for approval is included in Appendix B. The school principals and teachers were also informed, by the superintendent.

Population and Samples

The Montgomery County School District included 17 schools of which 11 were elementary schools and 6 were secondary schools (middle and high school). Table 2 illustrates the grades included in each school and the number of students enrolled in each school. The student enrollment figures listed do not include students enrolled in special education classes. These students were not included in the sample because the researchers decided that accurate responses to the survey instrument could not be obtained from this group due to their level of understanding. Two samples were selected to participate in the study and were based on the population figures stated above. The sample size was determined by Krejcie and Morgan's (1970, p. 608) table for determining sample size at the 95 percent confidence level in which $p < .05$.

Student Sample. This sample consisted of students from the secondary schools. Students in the elementary schools were not included in the student sample because the

Table 2 - DESCRIPTION OF COUNTY SCHOOLS -
GRADES AND STUDENT ENROLLMENTS

<u>Elementary Schools</u>	<u>Grades</u>	<u>Student Enrollment</u>
Belview	*K-5	320
Bethel	K-5	171
Christiansburg	3-5	590
Christiansburg Primary	K-2	576
Elliston Lafayette	K-5	183
Gilbert Linkous	K-5	502
Harding Avenue	K-5	326
Margaret Beeks	K-5	489
Prices Fork	K-5	252
Riner	K-5	252
Shawsville	K-5	246
		<u>3,907</u> Total in elementary schools

* Kindergarten

<u>Secondary Schools</u>	<u>Grades</u>	<u>Student Enrollment</u>
Auburn Middle & High	6-12	564
Blacksburg Middle	6-8	910
Blacksburg High	9-12	1007
Christiansburg Middle	6-8	842
Christiansburg High	9-12	901
Shawsville Middle & High	6-12	536
		<u>4,760</u> Total in secondary schools

reserachers decided that the students' parents could provide accurate responses to the survey instrument. Furthermore, Yperman and Vermeersch (1979) demonstrated that parents' attitudes have the greatest influence over younger children's acceptance of foods at school. Based on Krejcie and Morgan's (1970) formula a sample size of 360 students was selected. The students were selected in the following manner. A listing of all the county teachers and the specific type of classes they taught was obtained from the county school board office in December 1981. From this list all special education teachers were eliminated. The teachers' names were numbered 1 to 250 and a random numbers table (Kerlinger, 1973) was used in order to ensure a random selection of teachers. The school foodservice dietitian estimated an average of 20 students per class; therefore, 18 teachers were randomly selected in order to obtain 360 students within the sample. As a result of this sampling procedure only 4 teachers or approximately 180 students were selected from the two larger high schools containing the new a la carte program. The school foodservice administrators requested that more students be selected in order to obtain results that were more representative of the populations having access to an a la carte program. An additional 6 teachers were randomly selected from these two schools. Subsequently, after the survey instrument was pretested,

sixth graders were eliminated from the sample because they could not provide accurate responses. The resulting sample size was 520 secondary students.

Parent Sample. This sample consisted of the parents of students in both the elementary and secondary schools. The foodservice administrators wanted parents of students from both elementary and secondary school levels included since they had received feedback from parents with concerns about the school lunch policies and specifically in regard to the changes made during the 1981-82 academic year. The parent sample was derived from the total number of students in the elementary and secondary schools. Based on Krejcie and Morgan's (1970) formula a sample size of 370 parents was selected. The parents were selected in the following manner. The listing of county teachers and the specific type of classes they taught was used and again the special education teachers were eliminated. The kindergarten teachers were also eliminated from the list since kindergarten students were not in school the previous academic year. The parents, therefore, could not answer those questions comparing the 1981-82 lunch program to the previous year's program. The teachers' names were numbered 1 to 377 and a random numbers table (Kerlinger, 1973) was used in order to ensure a random selection of teachers. The estimated average class size of 20 was used again; however, a stratified cluster sampling

technique was used to arrive at the number of teachers' names selected. The total student population consisted of 45 percent elementary students and 55 percent secondary students. Therefore, eight elementary teachers' names were randomly selected and 11 secondary teachers' names were randomly selected in order to achieve approximately the same proportion of teachers as students in elementary and secondary schools. The elementary and secondary teachers' names were not separated for this procedure; therefore, numbers of teachers were randomly selected until this proportion was obtained. The resulting sample size was 353 parents of students in the elementary and secondary schools.

Instruments

The survey instruments were developed after consideration of the following factors, discussed by Dillman (1978):

1. Accessibility of representative sample
 - a. sampling technique
 - b. selection criteria
 - c. locating selected respondents
 - d. substitution procedures
 - e. response rate
 - f. bias from refusals

2. Obtaining responses to questions
 - a. length of questionnaire
 - b. types of questions asked
 - c. construction procedures
3. Obtaining accurate information
 - a. consultation when needed
 - b. contamination by others
 - c. interviewer distortion and subversion
 - d. social desirability bias
4. Administering survey
 - a. personnel requirements
 - b. speed of implementation
 - c. cost constraints

Selection and Construction. A written questionnaire was developed for the student sample. The decision was based on the following specific factors discussed by Dillman (1978): the students were readily accessible through their teachers (from which the sample was selected) and within the school classroom; the response rate would be high since completed questionnaires could be hand-collected by the researcher at the end of the 30 minute test period; the presence of the researcher could stimulate accurate responses by discussing the purpose of the study and answering questions as they arose. Also, the presence of the teacher could control class interaction and thereby contamination of responses could be

avoided; only one researcher would be necessary; the amount of time spent administering the questionnaires and the expense was minimal compared to other data collection techniques.

A telephone questionnaire was developed for the parent sample. The decision was based on the following factors discussed by Dillman (1978): parents' home telephone numbers were readily accessible from the students through their teachers (from which the sample was drawn) and within the school classroom; the number of households with telephones was in excess of 95 percent in Montgomery County (Shoemaker, 1983) during the data collection period (April - May 1982), therefore the majority of parents could be contacted in this manner. Also, over the telephone more accurate information could be obtained through probing questions and question clarification when needed; and data collection was more timely and less expensive than a mail questionnaire.

Both questionnaires were developed jointly by the researcher and school foodservice dietitian. In order to satisfy the needs of school foodservice administrators several questions were included on the questionnaire that were not within the scope of this research project. Guidelines for writing questions and constructing telephone questionnaires were obtained from Dillman (1978). In summary, questions were written to elicit a specific kind of

information (i.e., attitude, behavior, attributes) through the structure of the question (i.e., open-ended versus close-ended) and the actual choice of words.

The questions included on the student and parent survey instruments involved similar topic areas. The differences may be attributed to the fact that various student attitudes toward the school lunch program had been studied in the previous academic year. Table 3 summarizes the topics and numbers of the questions included on both survey instruments; however, only the questions used for this research project are mentioned. The complete survey instruments are included in Appendix C. There were two student surveys but the only difference was that one included the questions on the a la carte program and one ended with question 18.

Testing and Scoring of Instruments. Two professors in the Department of Human Nutrition and Foods reviewed the questions, on both survey instruments, for clarity and construct validity. A statistician reviewed the format of the questions to ensure that they could be coded for statistical analysis. This review process took place during the development of the questionnaire and after the pilot test was completed in March, 1982. The county's superintendent of schools and the school board approved the questions on the first draft in January, 1982. However, the

Table 3 - DESCRIPTION OF THE QUESTIONS ON THE
STUDENT AND PARENT QUESTIONNAIRES

<u>Student questionnaire</u>	
<u>Topic</u>	<u>Question #</u>
School attended	--
Grade level	--
Sex	--
Degree of program satisfaction	1
Reasons why satisfied	2
Reasons why dissatisfied	3
Attitudes toward the 1981-82 lunch program as compared to the 1980-81 lunch program	4
Level of participation	5
Participation in the 1981-82 lunch program as compared to the 1980-81 lunch program	6
Attitudes toward the number of food choices	7
Attitudes toward the frequency in which foods were served or menu variety	8
Attitudes toward the kinds of food served	9
Attitudes toward pricing desserts separately	10
Attitudes toward the nutritional value of the lunch	13
Attitudes toward the lunch price	14
Meal payment plan	16
Lunch line	17
Frequency purchase a la carte items for total lunch meal	19
Amount spend for lunch when buy only a la carte items	21
Frequency purchase a la carte items in addition to lunch meal	22
Amount spend for a la carte items purchased in addition to lunch	23
Attitudes toward the price of a la carte food items	25
Attitudes toward the kinds of food sold a la carte	26

Table 3 (Con't)

<u>Parent Questionnaire</u>	
<u>Topic</u>	<u>Question #</u>
School child attended	--
Grade level of child	--
Sex of child	--
Level of child's participation	1
Child's participation in the 1981-82 lunch program as compared to the 1980-81 lunch program	2
Reasons why child participated	3
Reasons why child participated more in the 1981-82 program as compared to the 1980-81 lunch program	3
Reasons why child participated less in the 1981-82 program as compared to the 1980-81 lunch program	3
Reasons why child did not participate	4
Awareness of foods served	5
Attitudes toward the choices of food	6
Attitudes toward pricing desserts separately	8
Attitudes toward the lunch price	11
Attitudes toward the nutritional value of the lunch	15
Degree of program satisfaction	16
Reasons why satisfied	17
Reasons why dissatisfied	17
Attitudes toward the 1981-82 lunch program as compared to the 1980-81 lunch program	18
Meal payment plan	20

final review and approval of all questions was conducted by the school foodservice administrators in March, 1982.

The student survey instrument was pilot-tested in both the middle school and high school. The two classes selected contained various grade levels and none of those pretested were included as a part of the student sample. The researcher administered the survey instrument in the classroom with the teacher present. Students were instructed to write their comments on the questionnaire if a question was unclear. They were also instructed to write in responses to questions if their reply did not coincide with the categories provided. As a result of the pilot test, sixth graders were eliminated from the sample because they could not understand and answer all the questions. Revisions were made until the reviewers and researcher determined that the students could complete the questions after the standard verbal instructions were given and no extra instructions were necessary.

The parent survey instrument was pilot-tested by the researcher on twenty parents included in the sample. There were no question revisions made as a result of this process.

Following data collection, the instruments were coded for computer analysis as described by the Statistical Package for the Social Sciences (Nie et al., 1975). The specific coding of the instruments are included in Appendix D.

Data Collection Procedures

The student survey instrument was administered during the period of April 22 to May 14, 1982. The teachers were contacted by telephone in order to arrange a class period in which to administer the questionnaire. The classes selected to participate in the study were determined by the principals' request, the teachers' class schedule and the researcher's time schedule. The only request by the researcher was that no sixth grade classes be included.

One researcher administered the student questionnaires within the classroom. The teachers remained in the classroom at the time in order to control class interaction and disciplinary problems. The researcher gave the following instructions to the students:

"The Montgomery County School Foodservice Department is conducting a survey to find out what students and parents think about the school lunch program. Your response will help determine what happens with your school lunch program. Only a few classes have been selected in each school; therefore, you are representing all the students in your school. I would like to encourage you to answer honestly and individually. There is space provided (question #18) for you to write any additional comments you may have.

Please use this opportunity to let us know what you think about the school lunch program. All your answers are anonymous and confidential. Please put all your answers on this form. Now, if everyone would complete the first question I will explain how you proceed from there. If you answered that you are satisfied or somewhat satisfied with the school lunch program this year answer question #2 and tell us why you are satisfied. Then you skip question #3 and proceed with question #4 and the remainder of the questionnaire. If you answered that you are dissatisfied with the school lunch program this year answer question #3 and tell us why you are dissatisfied. Make sure you skip question #2 and answer question #3 and then proceed with #4 and the remainder of the questionnaire. Are there any questions?"

The parents' telephone numbers were obtained during the period of April 22 to May 14, 1982. The teachers (chosen for the parent sample) were contacted by telephone in order to arrange a 5 minute time period with one of their classes. Specific instructions administered to the students during this period included the following:

"The Montgomery County School Foodservice Department is conducting a survey to find out what students and parents think about the school lunch

program. This class will not be participating in the study but your parents will. We will be calling them on the telephone to ask them questions about the school lunch program, not about you. So, if you have something you would like to say about your school lunch program please tell your parents about it. I have a letter for you to take home to your parents. This letter explains why we will be contacting them and when. It is very important that your parents receive this letter. I would also like you to write down on this 3"x5" card: your first name only, your grade and your home telephone number. When you finish this please pass them to me and make sure you receive a letter to take home."

Once the 3"x5" cards were collected they were checked for completion and labeled by the school and the date they were received. Following is a sample of the letter sent home to the parents.

Dear Parent:

The Montgomery County School Lunch Program seeks your help in evaluating this year's lunch program. Your family has been randomly selected to participate in this study. Your opinions will be used in evaluating the School Food Service Program. You will be contacted by telephone during the next few weeks, and asked to respond to a series of questions which will take approximately ten minutes to complete.

Thank you in advance for your cooperation.

Sincerely,
Barbara Antozzi
Field Manager/Dietitian

The classes selected for this procedure were not the same

classes selected for the student survey; however, some overlapping of individual students did exist. Once again, the classes selected to participate in this part of the study were determined by the principals' request, the teachers' class schedule and the researcher's time schedule. Sixth grade classes were also not included in this sample.

The telephone interviews were conducted between April 28, 1982 and June 1, 1982 by the researcher and 20 trained interviewers. The interviewers included 15 undergraduate students, studying marketing research and survey methodology, and senior undergraduate and graduate students in the Department of Human Nutrition and Foods. Each interviewer attended a training session which was conducted by the researcher. Dillman's (1978) training methods for telephone interviewers were the basis of the training session.

Training of the Interviewers. The interviewers were given an overview of the purpose and design of the study and specifically the methods used in obtaining the parents' telephone numbers. A complete background of the Montgomery County School Lunch Program and the 1981-82 program changes were discussed. Directions were given in regards to how the question was to be asked and of whom. For example, the way a parent answered a question determined how the following question would be asked; other questions were specific to

the grade and school the child attended. Each questionnaire included the child's first name, grade, school and home telephone number. These were references used by the interviewer in order to assure that the parent answered the questions in regards to only one child's school lunch program (as specified in the instructions of the questionnaire). Interviewers were instructed to call between 9:00 am and 9:00 pm and to ask for the child's mother; however, this was not critical.

In order to elicit a conversational and understandable speech, interviewers were instructed to paraphrase questions and speak clearly and slowly. Repeating questions and responses when necessary were strongly recommended. Open-ended questions were specifically discussed in order to ensure that responses were recorded accurately. They were instructed to briefly write down the response and at the completion of the interview they were to edit the response in order to make it clear to the researcher. No questions were to be left unanswered unless an explanation for this was included by the interviewer. Each interviewer included his name on each survey instrument in case further clarification of responses was needed by the researcher. A formal call record was not kept by the interviewers; however, they were instructed to note the time they called at the top of the questionnaire. Therefore, if the parent was not home or

could not talk at the time of the initial call, the interviewer could call back at another time. A summary sheet of anticipated questions and responses was prepared according to Dillman (1978) and distributed to each interviewer. The summary sheet is included in Appendix E. These questions were used to help maximize parent participation and alleviate the interviewers from problems they were not prepared to deal with. Precautionary measures were taken with the interviewers in order to maximize reliability. They were told that the researcher would call telephone numbers at random to ensure that a parent had actually been contacted. However, time limitations prevented implementation of this procedure.

Data Analysis

The Statistical Package for the Social Sciences (Nie, et al., 1975) was used to analyze the data collected from the survey instruments. Absolute frequencies and means were obtained. The SPSS crosstabulation subprogram was used to identify relationships between variables. Crosstabulations were conducted in an exploratory sense and only those relationships found to be meaningful and significant at the level of $p < .01$ were discussed. To determine if associations were statistically significant, chi-square tests were

conducted. All of the crosstabulations conducted are included in Appendix F. Refer to the survey instruments in Appendix C in order to identify the specific dependent variables described by the number of the question.

RESULTS

Description of the Samples

Descriptive information was obtained from the students and parents in order to characterize the samples. The following demographic data and characteristics were obtained from the secondary students: school, grade, sex, level of participation, participation in the 1981-82 lunch program as compared to the 1980-81 lunch program, meal payment plan and the lunch option they choose most frequently. Since the parents were asked to answer the questionnaire with regard to a specific child, the following demographic data and characteristics were obtained to describe the parents' children: school, grade, sex, level of participation, participation in the 1981-82 lunch program as compared to the previous year and meal payment plan. Parents' awareness of the kinds of food served by the school foodservice were also assessed. Table 4 illustrates the distribution of these characteristics among the two samples.

The student sample was obtained from a population of 4,760 secondary students. A representative sample of secondary students was obtained by a randomized cluster sampling techniques. A total of 520 secondary students were

Table 4 - DESCRIPTION OF THE STUDENT AND PARENT SAMPLE

Characteristics	Student Sample		Parent Sample	
	n	%	n	%
School Attend				
Blacksburg Middle	165	31.7	128	36.3
Christiansburg Middle	29	5.6	1	0.3
Auburn Middle and High	111	21.3	16	4.5
Shawsville Middle and High	45	8.7	39	11.0
Blacksburg High	88	16.9	--	--
Christiansburg High	82	15.8	24	6.8
Bethel Elementary			17	4.8
Christiansburg Primary			18	5.1
Elliston Lafayette Elementary			15	4.2
Gilbert Linkous Elementary			24	6.8
Harding Avenue Elementary			36	10.2
Prices Fork Elementary			16	4.5
Riner Elementary			19	5.4
Grade				
Seventh	210	40.4		
Eighth	118	22.7		
Ninth	22	4.2		
Tenth	76	14.6		
Eleventh	52	10.0		
Twelfth	42	8.1		
Elementary Level			145	41.1
Secondary Level			208	58.9
Sex				
Female	272	53.0	162	50.3
Male	241	47.0	160	49.7
Participation				
4 or 5 Times Per Week	289	55.6	247	70.2
2 or 3 Times Per Week	115	22.1	40	11.4
Once a Week	41	7.9	21	6.0
Never or Almost Never	75	14.4	44	12.5

Table 4 (con't)

<u>Characteristics</u>	<u>Student Sample</u>		<u>Parent Sample</u>	
Participation in the 1981-82 Lunch Program as Compared to the 1980-81 Lunch Program				
	n	%	n	%
Eat Lunch More	81	15.6	46	13.2
Eat Lunch About the Same	270	51.9	223	64.1
Eat Lunch Less	140	26.9	56	16.1
No Comparison	29	5.6	23	6.6
<hr/>				
Meal Payment Plan	n	%	n	%
Free Lunch	39	7.6	26	7.5
Reduced-Price Lunch	24	4.7	17	4.9
Full-Price Lunch	453	87.8	303	87.6
<hr/>				
Lunch Option Chosen Most Frequently	n	%	n	%
Hot Food Line (Type A Lunch)	370	72.0		
Salad Bar (Type A Lunch)	24	4.7		
Bring Bag Lunch from Home	67	13.0		
A La Carte Food Items	53	10.3		
<hr/>				
Awareness of the Kinds of Food Served	n	%	n	%
Yes			258	73.3
No			49	13.9
Sometimes			45	12.8
<hr/>				

sampling technique. A total of 520 secondary students were included in the final sample, representing 10.9 percent of the total population. Each of the 6 secondary schools was represented in the sample and students in grades 7 through 12 were represented. There were approximately the same number of females and males in the sample. Most of the students (55.6%) ate the school lunch 4 or 5 times per week and only 22.3 percent rarely ate the school lunch more than once per week. Approximately 52 percent of the students participated about the same in the 1981-82 program as they did the previous year. More students, however, participated less as opposed to more in the 1981-82 program as compared to the 1980-81 program. Most of the students (87.8%) paid the full price for lunch and most of the students (72.0%) bought their lunch from the hot food line most frequently. Participation in the a la carte program was low, partially because only one-third of the secondary schools served a la carte food items.

The parent sample was obtained from a population of the parents of 8,667 elementary and secondary students. A representative sample of parents with elementary and secondary students was obtained by a randomized and stratified cluster sampling technique. A total of 353 parents (representing 4.1 percent of the parents of the student population) were included in the final sample. Seven of the 11 elementary

schools and 5 of the 6 secondary schools were represented. Since a stratified sampling technique was used the parents represented 3.7 percent of the elementary student population and 4.4 percent of the secondary student population. The parents represented students from every grade except kindergarten and sixth grade because these grades were not included in the selection of the sample. Parents were classified as representing either elementary or secondary students, rather than specific grade levels because of the small number in each grade. There were approximately the same number of female and male students represented by the parents. The parents represented 70.2 percent of the students who ate lunch 4 or 5 times per week and only 18.5 percent of the students who rarely ate a school lunch more than once a week. Most of the parents (64.1%) believed their children participated about the same in the 1981-82 lunch program as they did in the previous year's program. Parents also reported that more students participated less as opposed to more in the 1981-82 program as compared to the 1980-81 program. Most of the parents (87%) reported that their children paid the full price for lunch. Approximately 73 percent of the parents were aware of the kinds of food served in the school foodservice program, while 13.9 percent were not aware of the kinds of foods served and 12.8 percent were sometimes aware of the kinds of food served.

County School Lunch Participation

School foodservice program records provided data on the level of school lunch participation in Montgomery County. Participation figures were obtained for the three academic years preceding the data collection period, and one academic year following the data collection period for comparison. The percentages of Type A meal participation during the 5 year period are reported in Table 5. These figures, however, do not include participation in the a la carte lunch program because this program was not implemented until the 1981-82 academic year.

Type A meal participation increased each academic year prior to the 1981-82 academic year but participation decreased 8.2 percent during the 1981-82 academic year. In March 1983 participation had increased 2.1 percent over the 1981-82 participation level. Including a la carte lunch participation, approximately 72.9 percent of the students participated during the 1981-82 lunch program and about 77 percent of the students participated in the 1982-83 lunch program as of March 1983.

Price of the School Lunch

Attitudes toward the price of the school lunch were

Table 5 - TYPE A LUNCH PARTICIPATION
FOR A FIVE YEAR PERIOD

	Academic Year				
	1978-79	1979-80	1980-81	1981-82 [*]	1982-83 ^{**}
Average Daily Attendance	8,729	8,603	8,577	8,375	8,071
Type A Meal Participation	6,541	6,631	6,785	5,938	5,866
% of Type A Meal Participation	74.9%	77.1%	79.1%	70.9%	73.0%

* Academic year in which data were collected.

** Figures were based on March averages, not the academic year averages.

Source: Montgomery County School Foodservice's participation records.

in order to determine whether the students and parents thought the lunch price was economical. The lunch prices were changed for the 1981-82 academic year. In the secondary schools the price of the Type A lunch was increased from 65¢ to 80¢ and in the elementary schools the price increased from 60¢ to 75¢. The reduced-price lunch was also increased from 20¢ to 40¢ at the elementary and secondary levels. The students' and parents' attitudes toward the price of the Type A lunch are depicted in Table 6.

The largest group of students (33.4%) thought the lunch price was somewhat expensive, whereas the largest group of parents thought the lunch price was about right. The students and parents both felt the lunch price was more expensive than inexpensive.

Crosstabulations were conducted in order to determine the relationship between students' and parents' attitudes toward the lunch prices and other descriptive and attitudinal variables. Significant ($p < .01$) relationships were found between the students' attitudes toward the lunch price and the following variables: degree of program satisfaction; attitudes toward the 1981-82 lunch program as compared to the 1980-81 program; level of participation; and sex. Significant ($p < .01$) relationships were found between the parents' attitudes toward the lunch price and the following variables: degree of program satisfaction;

Table 6 - STUDENTS' AND PARENTS' ATTITUDES TOWARD THE
PRICE OF THE TYPE A SCHOOL LUNCH

Responses	Students		Parents	
	n	%	n	%
Inexpensive	42	8.1	19	5.6
Somewhat Inexpensive	51	9.8	12	3.5
About Right	130	25.1	218	64.1
Somewhat Expensive	173	33.4	57	16.8
Expensive	122	23.6	34	10.0
Total Responses	518	100.0	340	100.0

attitudes toward the 1981-82 program as compared to the 1980-81 program; and attitudes toward dessert being priced separately from the Type A lunch.

Table 7 illustrates the relationship between students' attitudes toward the price of the Type A lunch and their degree of satisfaction with the 1981-82 lunch program. Approximately one-third (34.1%) of the students who thought the lunch price was inexpensive were satisfied with the school lunch program and only 14.6 percent of these students were dissatisfied with the program. In comparison, of those students who thought the lunch price was expensive, 13.1 percent were satisfied and 23 percent were dissatisfied. Therefore, students that perceived the lunch price to be inexpensive were more satisfied with the lunch program than the students who thought the lunch price was expensive. Approximately the same percentage of students who thought the lunch price was about right were either somewhat satisfied or somewhat dissatisfied.

The relationship between students' attitudes toward the lunch price and the 1981-82 school lunch program as compared to the 1980-81 program is depicted in Table 8. The largest groups of students thought the lunch price was inexpensive (53.7%), somewhat inexpensive (68.0%), about right (45%), somewhat expensive (52.9%), and expensive (35%) and liked the 1981-82 lunch program more than the previous year's

Table 7 - CROSSTABULATION OF STUDENTS' ATTITUDES
TOWARD THE LUNCH PRICE AND THEIR DEGREE
OF PROGRAM SATISFACTION

Attitudes Toward the Lunch Price	Degree of Program Satisfaction				Row Total Number
	Satisfied Row %	Somewhat Satisfied Row %	Somewhat Dissatisfied Row %	Dissatisfied Row %	
Inexpensive	34.1	24.4	26.8	14.6	41
Somewhat Inexpensive	7.8	45.1	45.1	2.0	51
About Right	13.8	35.4	36.9	13.8	130
Somewhat Expensive	13.3	29.5	44.5	12.7	173
Expensive	13.1	17.2	46.7	23.0	122
$\chi^2=41.32$	df=12	p<.01	n=517		

Table 8 - CROSSTABULATION OF STUDENTS' ATTITUDES TOWARD THE LUNCH PRICE AND THE 1981-82 LUNCH PROGRAM AS COMPARED TO THE 1980-81 PROGRAM

Attitudes Toward the 1981-82 Program as Compared to the 1980-81 Program					
Attitudes Toward the Lunch Price	Liked More Row %	Liked About the Same Row %	Liked Less Row %	No Comparison Row %	Row Total Number
Inexpensive	53.7	17.1	17.1	12.2	41
Somewhat Inexpensive	68.0	16.0	14.0	2.0	50
About Right	45.0	31.8	13.2	10.1	129
Somewhat Expensive	52.9	32.6	10.5	4.1	172
Expensive	35.0	31.7	27.5	5.8	120
$\chi^2=37.80$	df=12	p<.01	n=512		

program. Therefore, regardless of the students' opinions of the lunch price they liked the 1981-82 lunch program more than the 1980-81 program.

Table 9 illustrates the relationship between the students' attitudes toward the lunch price and their level of participation. Most of the students thought the lunch price was inexpensive (52.4%), about right (54.6%), and expensive (63.9%) and also participated 4 or 5 times per week. Therefore, regardless of the students' opinions of the lunch price more students participated frequently than infrequently.

The relationship between students' attitudes toward the lunch price and their sex is illustrated in Table 10. The price of the lunch was about right, according to 63.3 percent of the females and 36.7 percent of the males. The lunch price was somewhat inexpensive, according to 70.6 percent of the males and 29.4 percent of the females. Therefore, more males than females thought the lunch price was rather inexpensive.

The relationship between parents' opinions of the Type A lunch price and their degree of program satisfaction is depicted in Table 11. Approximately 74 percent of the parents who thought the lunch price was inexpensive were satisfied with the program, but only 40.6 percent of the parents who thought the lunch price was expensive were

Table 9 - CROSSTABULATION OF STUDENTS' ATTITUDES
TOWARD THE LUNCH PRICE AND THEIR LEVEL OF PARTICIPATION

Attitudes Toward the Lunch Price	Level of Participation				Row Total Number
	4 or 5 Times/Week	2 or 3 Times/Week	Once a Week	Never or Almost Never	
	Row %	Row %	Row %	Row %	
Inexpensive	52.4	26.2	9.5	11.9	42
Somewhat Inexpensive	60.8	29.4	5.9	3.9	51
About Right	54.6	19.2	13.1	13.1	130
Somewhat Expensive	49.1	20.8	6.9	23.1	173
Expensive	63.9	23.0	4.1	9.0	122
$\chi^2=28.34$ $df=12$ $p<.01$ $n=518$					

Table 10 - CROSSTABULATION OF STUDENTS' ATTITUDES
TOWARD THE LUNCH PRICE AND THEIR SEX

Attitudes Toward the Lunch Price	Sex		Row Total Number
	Female Row %	Male Row %	
Inexpensive	50.0	50.0	42
Somewhat Inexpensive	29.4	70.6	51
About Right	63.3	36.7	128
Somewhat Expensive	56.1	43.9	171
Expensive	47.9	52.1	119
$\chi^2=18.88$ $df=4$ $p<.01$ $n=511$			

Table 11 - CROSSTABULATION OF PARENTS' ATTITUDES
TOWARD THE LUNCH PRICE AND THEIR DEGREE
OF PROGRAM SATISFACTION

Attitudes Toward the Lunch Price	Degree of Program Satisfaction				Row Total Number
	Satisfied Row %	Somewhat Satisfied Row %	Somewhat Dissatisfied Row %	Dissatisfied Row %	
Inexpensive	73.7	15.8	5.3	5.3	19
Somewhat Inexpensive	54.5	18.2	9.1	18.2	11
About Right	63.0	27.5	6.6	2.8	211
Somewhat Expensive	43.6	43.6	10.9	1.8	55
Expensive	40.6	15.6	25.0	18.8	32
$\chi^2=43.54$ $df=12$ $p<.01$ $n=328$					

satisfied. Therefore, the less expensive the lunch price is perceived to be the more satisfied parents are with the lunch program.

Table 12 represents the relationship between parents' attitudes toward the lunch price and the 1981-82 program as compared with the 1980-81 program. Approximately 62 percent of the parents thought the lunch price was inexpensive and liked the 1981-82 program more than the previous year's program. In comparison, only 32.4 percent of the parents thought the lunch price was expensive and liked the 1981-82 program more than the previous year's program. Also, 26.5 percent of the parents thought the lunch price was expensive and liked the 1981-82 program less than the 1980-81 program as compared to 12.5 percent of the parents who thought the lunch price was inexpensive and also liked the program less. Therefore, the less expensive parents thought the lunch price was the more they liked the 1981-82 lunch program more than the previous year's program. Also, the more expensive parents thought the lunch price was the less they liked the 1981-82 lunch program as compared to the 1980-81 program.

The crosstabulation between parents' attitudes toward the lunch price and their attitudes toward desserts being priced separately from the Type A lunch is illustrated in Table 13. The results indicated that 40.5 percent of the parents thought the lunch price was about right and also

Table 12 - CROSSTABULATION OF PARENTS' ATTITUDES TOWARD THE LUNCH PRICE AND THE 1981-82 LUNCH PROGRAM AS COMPARED TO THE 1980-81 PROGRAM

Attitudes Toward the 1981-82 Program as Compared to the 1980-81 Program					
Attitudes Toward the Lunch Price	Liked More Row %	Liked About the Same Row %	Liked Less Row %	No Comparison Row %	Row Total Number
Inexpensive	62.5	25.0	12.5	0.0	16
Somewhat Inexpensive	50.0	33.3	16.7	0.0	12
About Right	50.0	38.3	4.7	7.0	214
Somewhat Expensive	28.1	52.6	12.3	7.0	57
Expensive	32.4	38.2	26.5	2.9	34
$\chi^2=30.98$ $df=12$ $p<.01$ $n=333$					

Table 13 - CROSSTABULATION OF PARENTS' ATTITUDES TOWARD THE LUNCH PRICE AND PRICING DESSERTS SEPARATELY FROM THE TYPE A LUNCH

Attitudes Toward Pricing Desserts Separately						
Attitudes Toward the Lunch Price	Liked Row %	Somewhat Liked Row %	Somewhat Disliked Row %	Disliked Row %	No Response Row %	Row Total Number
Inexpensive	31.6	21.1	10.5	10.5	26.3	19
Somewhat Inexpensive	0.0	58.3	16.7	16.7	8.3	12
About Right	40.5	20.5	10.2	22.3	6.5	215
Somewhat Expensive	12.3	14.0	19.3	45.6	8.8	57
Expensive	25.0	3.1	6.3	59.4	6.3	32
$\chi^2=65.69$	df=16	p<.01	n=335			

liked the desserts priced separately from the Type A lunch. However, the parents who perceived the lunch price to be somewhat expensive (45.6%) and expensive (59.4%) also disliked the desserts priced separately. If parents thought the lunch price was inexpensive or somewhat inexpensive they liked the desserts priced separately more than they disliked it. Therefore, the more expensive parents thought the lunch price was the more they disliked desserts priced separately.

Nutritional Value of the School Lunch

On a scale from 1 to 10, students and parents were asked to rate the nutritional value of the Type A lunches (1 was not nutritious and 10 was very nutritious). Table 14 illustrates the students' and parents' opinions of the lunches' nutritional value. Approximately 27 percent of the students gave the school lunches a score of 5 and approximately 27 percent of the parents gave a score of 8. The students' mean nutritional score was 5.1 and the parents' mean score was 7.6. Therefore, the parents thought the Type A lunches were more nutritious than the students did.

Significant ($p < .01$) crosstabulations were found between students' opinions of the lunches' nutritional value and the

Table 14 - STUDENTS' AND PARENTS' ATTITUDES TOWARD THE
NUTRITIONAL VALUE OF THE SCHOOL LUNCH

Score of Nutritional Value	Respondents			
	Students		Parents	
	n	%	n	%
1	25	4.9	2	0.6
2	25	4.9	1	0.3
3	42	8.2	4	1.2
4	90	17.5	9	2.7
5	140	27.2	32	9.6
6	74	14.4	27	8.1
7	52	10.1	72	21.7
8	42	8.2	90	27.1
9	19	3.7	31	9.3
10	5	1.0	64	19.3
Totals	514	100.0	332	100.0
\bar{X}	5.1		7.6	

following variables: degree of program satisfaction; attitudes toward the 1981-82 lunch program as compared to the 1980-81 program; participation in the 1981-82 program as compared to the 1980-81 program; and attitudes toward the menu variety and the kinds of food served. A significant ($p < .01$) crosstabulation was also found between parents' opinions of the lunches' nutritional value and their degree of program satisfaction. Since the nutritional value was scored on a scale of 10 the number of responses in each category was small. Therefore, the crosstabulations were based on the following condensed categories: not nutritious (scores 1 to 3), moderately nutritious (scores 4 to 7) and very nutritious (scores 8 to 10).

Table 15 represents the crosstabulation between students' attitudes toward the nutritional value of the Type A lunches and their degree of program satisfaction. Approximately 35 percent of the students who thought the lunches were very nutritious were satisfied with the program and only 7.7 percent of the students who thought the school lunches were not nutritious were satisfied with the program. However, 41.8 percent of the students who thought the lunches were not nutritious were dissatisfied with the program, and only 7.6 percent of the students who thought the lunches were very nutritious were dissatisfied with the program. Therefore, the more nutritious the students thought

Table 15 - CROSSTABULATION OF STUDENTS' ATTITUDES TOWARD THE NUTRITIONAL VALUE OF THE LUNCHES AND THEIR DEGREE OF PROGRAM SATISFACTION

Attitudes Toward the Lunches' Nutritional Value	Degree of Program Satisfaction				Row Total Number
	Satisfied Row %	Somewhat Satisfied Row %	Somewhat Dissatisfied Row %	Dissatisfied Row %	
Not Nutritious	7.7	15.4	35.2	41.8	91
Moderately Nutritious	12.6	32.0	46.3	9.0	256
Very Nutritious	34.8	33.3	24.2	7.6	66
$\chi^2=93.14$	df=6	p<.01	n=513		

the lunches were the more satisfied they were with the program and the less nutritious the students thought the lunches were the more dissatisfied they were with the lunch program.

Table 16 represents the relationship between students' opinions of the lunches' nutritional value and their attitudes toward the 1981-82 lunch program and the 1980-81 program. The results indicated that 59.1 percent of the students who thought the lunches were very nutritious liked the 1981-82 lunch program more than the previous year's program and only 25.3 percent of the students who thought the lunches were not nutritious liked the 1981-82 lunch program more. Approximately 30 percent of the students who thought the lunches were not nutritious liked the 1981-82 program less than the 1980-81 program, whereas only 9.1 percent of the students who thought the lunches were very nutritious liked the 1981-82 program less than the previous year's program. Therefore, the more nutritious the students thought the lunches were the more they liked the 1981-82 program as compared to the previous year's program.

The relationship between students' attitudes toward the lunches' nutritional value and their participation in the 1981-82 program as compared to the previous year's program is depicted in Table 17. Approximately 26 percent of the students who thought the lunches were very nutritious

Table 16 - CROSSTABULATION OF STUDENTS' ATTITUDES TOWARD THE NUTRITIONAL VALUE OF THE LUNCHES AND THE 1981-82 PROGRAM AS COMPARED TO THE 1980-81 PROGRAM

Attitudes Toward the 1981-82 Program as Compared to the 1980-81 Program					
Attitudes Toward the Lunches' Nutritional Value	Liked More Row %	Like About the Same Row %	Liked Less Row %	No Comparison Row %	Row Total Number
Not Nutritious	25.3	34.1	29.7	11.0	91
Moderately Nutritious	51.9	29.6	14.2	4.3	351
Very Nutritious	59.1	19.7	9.1	12.1	66
$\chi^2=37.04$	df=6	p<.01	n=508		

Table 17 - CROSSTABULATION OF STUDENTS' ATTITUDES TOWARD THE NUTRITIONAL VALUE OF THE LUNCHES AND PARTICIPATION IN THE 1981-82 PROGRAM AS COMPARED TO THE 1980-81 PROGRAM

Attitudes Toward the Lunches' Nutritional Value	Participation in the 1981-82 Program as Compared to the 1980-81 Program				Row Total Number
	Participated More Row %	Participated About the Same Row %	Participated Less Row %	No Comparison Row %	
Not Nutritious	6.5	48.9	35.9	8.7	92
Moderately Nutritious	16.3	53.7	25.6	4.5	356
Very Nutritious	25.8	45.5	21.2	7.6	66
$\chi^2=16.71$	df=6	p<.01	n=514		

participated more during the 1981-82 academic year than the previous year and only 6.5 percent of the students who thought the lunches were not nutritious participated more than in the previous year's program. In comparison, 35.9 percent of the students who thought the lunches were not nutritious participated less and 21.2 percent of the students who thought the lunches were very nutritious participated less. Therefore, the more nutritious the students thought the lunches were the more they participated in the 1981-82 program as compared to the previous year's program.

Table 18 illustrates the relationship between students' attitudes toward the lunches' nutritional value and the number of times a month the foods were served (or menu variety). Approximately 33 percent of the students who thought the lunches were very nutritious liked the menu variety and only 13.6 percent of the students who thought the lunches were very nutritious disliked the menu variety. In comparison, 35.9 percent of the students who thought the lunches were not nutritious disliked the menu variety and 6.5 percent liked the menu variety. Therefore, the more nutritious the students thought the lunches were the more they liked the menu variety.

The relationship between students' attitudes toward the lunches' nutritional value and the kinds of food served is depicted in Table 19. Approximately 38 percent of the

Table 18 - CROSSTABULATION OF STUDENTS' ATTITUDES TOWARD THE NUTRITIONAL VALUE OF THE LUNCHES AND MENU VARIETY

Attitudes Toward the Lunches' Nutritional Value	Attitudes Toward the Menu Variety				Row Total Number
	Liked Row %	Somewhat Liked Row %	Somewhat Disliked Row %	Disliked Row %	
Not Nutritious	6.5	29.3	28.3	35.9	92
Moderately Nutritious	13.0	40.6	33.5	13.0	355
Very Nutritious	33.3	36.4	16.7	13.6	66
$\chi^2=51.62$		df=6	p<.01	n=513	

Table 19 - CROSSTABULATION OF STUDENTS' ATTITUDES TOWARD THE NUTRITIONAL VALUE OF THE LUNCHES AND THE KINDS OF FOOD SERVED

Attitudes Toward the Lunches' Nutritional Value	Attitudes Toward the Kinds of Food Served				Row Total Number
	Liked Row %	Somewhat Liked Row %	Somewhat Disliked Row %	Disliked Row %	
Not Nutritious	7.7	28.6	33.0	30.8	91
Moderately Nutritious	16.0	53.9	25.3	4.8	356
Very Nutritious	37.9	53.0	6.1	3.0	66
$\chi^2=99.56$ $df=6$ $p<.01$ $n=513$					

students who thought the lunches were very nutritious liked the kinds of food served and only 3.0 percent of the students who thought the lunches were very nutritious disliked the kinds of food served. In comparison, 30.8 percent of the students who thought the lunches were not nutritious disliked the kinds of foods served and 7.7 percent liked the kinds of foods served. Therefore, the more nutritious the students thought the lunches were the more they liked the kinds of foods served.

Table 20 illustrates the relationship between parents' attitudes toward the nutritional value of the lunches and their degree of program satisfaction. Approximately 75 percent of the parents who thought the lunches were very nutritious were satisfied with the school lunch program and less than 1 percent were dissatisfied. In comparison, 83.3 percent of the parents who thought the lunches were not nutritious were dissatisfied with the program and none of the parents were satisfied. Therefore, the more nutritious the parents thought the lunches were the more satisfied they were with the school lunch program.

The 1981-82 School Foodservice's Budget

The Montgomery County school foodservice's budget projections and actual fiscal performance was analyzed for

Table 20 - CROSSTABULATION OF PARENTS' ATTITUDES TOWARD THE NUTRITIONAL VALUE OF THE LUNCHES AND THEIR DEGREE OF PROGRAM SATISFACTION

Attitudes Toward the Lunches' Nutritional Value	Degree of Program Satisfaction				Row Total Number
	Satisfied Row %	Somewhat Satisfied Row %	Somewhat Dissatisfied Row %	Dissatisfied Row %	
Not Nutritious	0.0	0.0	16.7	83.3	6
Moderately Nutritious	40.7	39.3	12.6	7.4	135
Very Nutritious	74.6	19.9	5.0	0.6	181
$\chi^2=119.53$ $df=6$ $p<.01$ $n=322$					

the 1981-82 academic year. When the projected receipts were compared with the actual receipts for the 1981-82 academic year, it was apparent that the increase in prices had compensated for the decrease in federal reimbursements. In addition, the actual expenditures during the 1981-82 academic year were only 89.9 percent of the projected expenditures. Overall, the school foodservice's budget was improved over the previous academic year's balance or surplus of funds.

Factors Affecting Program Satisfaction

Students and parents were asked how satisfied they were with the lunches served during the 1981-82 academic year. These results are illustrated in Table 21. The largest group of the students (41.6%) were somewhat dissatisfied with the 1981-82 school lunch program and the majority of the parents (58.6%) were satisfied. Approximately 29 percent of the students were somewhat satisfied and 27.7 percent of the parents were somewhat satisfied. The parents, as opposed to the students, were more satisfied with the 1981-82 lunch program.

The students and parents were also asked whether they liked the 1981-82 lunch program more than, less than, or about the same as the previous academic year's program. Those students that were not enrolled in the same school the

Table 21 - STUDENTS' AND PARENTS' DEGREE OF PROGRAM
SATISFACTION DURING THE 1981-82 ACADEMIC YEAR

Responses	Students		Parents	
	n	%	n	%
Satisfied	76	14.6	197	58.6
Somewhat Satisfied	151	29.1	93	27.7
Somewhat Dissatisfied	216	41.6	30	8.9
Dissatisfied	76	14.6	16	4.8
Total Responses	519	100.0	336	100.0

previous year did not make a comparison; neither did their parents. The results are depicted in Table 22. The largest groups of students (48.1%) and parents (44.3%) liked the 1981-82 lunch program more than the 1980-81 lunch program. However, more parents (40.5%) than students (29.2%) liked the 1981-82 lunch program about the same as the previous year's program. Only 16.2 percent of the students and 8.8 percent of the parents liked the 1981-82 program less than the 1980-81 program.

Students and parents were also asked why they were satisfied or dissatisfied with the 1981-82 lunch program. The students could select as many factors as applied; however, if they were somewhat satisfied or satisfied with the program they were to select the reasons why they were satisfied and if they were somewhat dissatisfied or dissatisfied they were asked to select the reasons why they were dissatisfied. The list of factors provided were based on the 1980-81 school lunch survey results and the 1981-82 program changes. Since the factors which affected the parents' satisfaction or dissatisfaction had not been previously assessed, the parents' question was open-ended. However, if they had trouble answering the question the telephone interviewer provided a list of factors similar to those given the students. The parents were also asked to provide reasons why they were satisfied or dissatisfied, not both. The factors

Table 22 - STUDENTS' AND PARENTS' ATTITUDES TOWARD THE
1981-82 SCHOOL LUNCH PROGRAM AS COMPARED TO
THE 1980-81 PROGRAM

<u>Responses</u>	Students		Parents	
	n	%	n	%
Liked More	247	48.1	151	44.3
Liked About the Same	150	29.2	138	40.5
Liked Less	83	16.2	30	8.8
No Comparison	33	6.4	22	6.5
<u>Total Responses</u>	<u>513</u>	<u>100.0</u>	<u>341</u>	<u>100.0</u>

which affected the students' satisfaction and dissatisfaction with the 1981-82 lunch program are depicted in Table 23 and the factors which affected the parents' satisfaction and dissatisfaction are illustrated in Table 24.

The factors that affected the students' satisfaction the most were: the number of food choices served at each meal (25.0%) and the kinds of food served (21.7%). The factors that affected the students' dissatisfaction the most were: the taste of the foods served (16.0%) and the portion sizes of the foods served (15.7%).

The factors that affected the parents' satisfaction the most were: the food choices (24.2%) and the kinds of food served (20.8%). However, the factors that affected the parents' dissatisfaction the most were: the kinds of foods served (27.0%) and the way the food was prepared (24.0%). The "other" categories were developed because there were a wide variety of factors stated by only a small number of parents. The following additional factors affected the parents' satisfaction with the program: the fact that it is a hot lunch; the convenience; the price of the lunch; and the personnel. The following additional factors affected the parents' dissatisfaction with the program: the temperature of the food; the food choices; the price of the lunch; the menu variety; the personnel; and the nutritional value of the lunches.

Table 23 - FACTORS AFFECTING STUDENTS' SATISFACTION AND DISSATISFACTION WITH THE 1981-82 SCHOOL LUNCH PROGRAM

Response	Student Satisfaction		Student Dissatisfaction	
	n	%	n	%
The Number of Times a Month the Foods were Served	81	12.3	131	11.0
The Number of Choices Served at Each Meal	165	25.0	74	6.2
The Kinds of Food Served	143	21.7	131	11.0
The Taste of Foods Served	62	9.4	191	16.0
The Way the Food was Prepared	32	4.8	115	9.7
The Portion Sizes of the Foods Served	31	4.7	187	15.7
The Temperature of the Foods Served	50	7.6	142	11.9
The Price of the Student Lunch	38	5.8	177	14.9
The Nutritional Value of the Foods Served	57	8.6	42	3.5
Total Responses	659	100.0	1190	100.0

Table 24- FACTORS AFFECTING PARENTS' SATISFACTION AND DISSATISFACTION WITH THE 1981-82 SCHOOL LUNCH PROGRAM

Factors Affecting Program Satisfaction	Responses	
	n	%
The Food Choices	99	24.2
The Kinds of Food Served	85	20.8
The Child Liked the School Lunches	84	20.5
The Nutritional Value of the Lunches	72	17.6
Other	69	16.9
Total Responses	409	100.0

Factors Affecting Program Dissatisfaction	Responses	
	n	%
The Kinds of Food Served	27	27.0
The Way the Food Was Prepared	24	24.0
The Portion Sizes of the Foods Served	10	10.0
The Child Disliked the School Lunches	10	10.0
Other	29	29.0
Total Responses	100	100.0

A significant ($p < 0.1$) crosstabulation indicated that 68.9 percent of the students who were satisfied with the number of choices served liked the 1981-82 lunch program more than the 1980-81 program. Another significant ($p < 0.1$) crosstabulation indicated that 62.9 percent of the students who were satisfied with the kinds of food served liked the 1981-82 school lunch program more than the 1980-81 program.

A significant ($p < .01$) crosstabulation indicated that 37.2 percent of the students who were dissatisfied with the taste of the food participated less during the 1981-82 program than during the previous year's program. In comparison, only 13.6 percent of the students who were dissatisfied with the taste of the food participated more during the 1981-82 program than during the previous year. Another significant crosstabulation detected that of those students who were dissatisfied with the taste of the food, 56.2 percent were females and 43.8 percent were males. A significant ($p < .01$) crosstabulation also indicated that of the students dissatisfied with the portion sizes, 57.9 percent were males and 42.1 percent were females.

Factors Affecting Participation

The factors that affected students' participation and non-participation in the 1981-82 lunch program, according to

the parents, are illustrated in Table 25. The parents thought that two main factors affected student participation, the fact it is a hot lunch (25.4%) and the convenience (22.3%). The parents thought that three main factors affected student non-participation, the kinds of food served (57.0%), the long lines, and not enough time to eat (11.6%). The "other" categories were developed because there were a wide variety of responses given by only a small number of parents. The following additional factors were also believed to affect student participation: the food choices and variety of foods served; the price of the lunch; the fact that children need to eat; the participation of their friends; and the fact it provided a good learning experience. The following additional factors were also believed to affect student non-participation: the way the food is prepared; the non-participation of their friends; and the menu variety.

Table 26 illustrates the factors which affected more student participation and less student participation in the 1981-82 program as compared to the 1980-81 program, according to parents. The main factors that resulted in increased participation in the 1981-82 program than in the 1980-81 program were: the menu choices (32.7%) and the convenience (22.4%). The main factors that resulted in decreased participation in the 1981-82 program were: the

Table 25- FACTORS AFFECTING STUDENTS' PARTICIPATION AND NON-PARTICIPATION ACCORDING TO PARENTS

Factors Affecting Student Participation	Responses	
	n	%
The Fact it is a Hot Lunch	57	25.4
The Convenience	50	22.3
The Kinds of Food Served	48	21.4
The Nutritional Value of the Lunches	37	16.5
Other	32	14.3
Total Responses	224	100.0

Factors Affecting Student Non-Participation	Responses	
	n	%
The Kinds of Food Served	49	57.0
The Long Lines and Not Enough Time to Eat	10	11.6
The Price of the Lunch	8	9.3
The Child Likes Food from Home	8	9.3
Other	11	12.8
Total Responses	86	100.0

Table 26- FACTORS AFFECTING MORE PARTICIPATION AND LESS PARTICIPATION IN THE 1981-82 SCHOOL LUNCH PROGRAM ACCORDING TO PARENTS

Factors Affecting More Participation	Responses	
	n	%
The Menu Choices	19	32.7
The Convenience	13	22.4
The Kinds of Food Served	9	15.5
Other	17	29.3
Total Responses	58	100.0
Factors Affecting Less Participation	Responses	
	n	%
The Kinds of Food Served	23	31.5
The Price of the Lunch	18	24.6
The Way the Food Was Prepared	13	17.8
Other	19	26.0
Total Responses	73	100.0

kinds of food served (31.5%) and the price of the lunch (24.6%). Again, the "other" categories were developed because there were a wide variety of responses given by only a small number of parents. The following additional factors were also believed to affect more student participation: the fact that their child matured; the fact it is a hot lunch; their friends participated; the nutritional value of the lunch and the way it was prepared. The following additional factors were also believed to affect less student participation: the portion sizes; the fact their child liked food from home; the fact they can make a nutritious bag lunch at home; the fact their child was on a diet; the long lines; and the temperature of the food.

A significant ($p < .01$) crosstabulation indicated that 63.2 percent of the parents who said their child participated because it was a hot lunch had children at the elementary level. Also, 72 percent of the parents who said their child participated because it was convenient had children at the secondary level. This was significant at the $p < .01$ level.

Attitudes Toward Food Choices

Both the students and their parents were asked how they felt about the number of food choices served at each meal.

Table 27 illustrates the students' and parents' attitudes toward the food choices served.

Nearly half of the students (48.2%) somewhat liked the food choices and most of the parents (75.0%) liked the food choices. However, more students (23.5%) liked the food choices as compared to those who somewhat disliked (19.5%) or disliked (8.9%) the food choices. Significant ($p < .01$) crosstabulations were found between the students' attitudes toward the food choices and the following variables: degree of program satisfaction; attitudes toward the 1981-82 program as compared to the 1980-81 program; and participation in the 1981-82 program as compared to the 1980-81 program. Significant ($p < .01$) crosstabulations were also found between the parents' attitudes toward the food choices and the following variables: degree of program satisfaction and attitudes toward the 1981-82 lunch program as compared to the 1980-81 program.

Table 28 represents the relationship between the students' attitudes toward the food choices and their degree of satisfaction with the 1981-82 lunch program. The results indicated that 37.7 percent of the students who liked the food choices were satisfied with the lunch program and only 7.4 percent of the students who liked the food choices were dissatisfied. However, 54.3 percent of the students who disliked the food choices were also dissatisfied with the

Table 27 - STUDENTS' AND PARENTS' ATTITUDES
TOWARD THE FOOD CHOICES

Responses	Students		Parents	
	n	%	n	%
Liked	122	23.5	258	75.0
Somewhat Liked	250	48.2	62	18.0
Somewhat Disliked	101	19.5	14	14.1
Disliked	46	8.9	10	2.9
Total Responses	519	100.0	344	100.0

Table 28 - CROSSTABULATION OF STUDENTS' ATTITUDES TOWARD THE
FOOD CHOICES AND DEGREE OF PROGRAM SATISFACTION

Attitude Toward the Food Choices	Degree of Program Satisfaction				Row Total Number
	Satisfied Row %	Somewhat Satisfied Row %	Somewhat Dissatisfied Row %	Dissatisfied Row %	
Liked	37.7	27.0	27.9	7.4	122
Somewhat Liked	10.8	39.8	41.8	7.6	249
Somewhat Disliked	2.0	11.9	63.4	22.8	101
Disliked	2.2	15.2	28.3	54.3	46
$\chi^2=171.54$ $df=9$ $p<.01$ $n=518$					

program and only 2.2 percent of the students who disliked the food choices were dissatisfied with the program. Therefore the more the students liked the food choices the more satisfied they were with the program and the more the students disliked the food choices the more dissatisfied they were with the program.

The relationship between the students' attitudes toward the food choices and their attitudes toward the 1981-82 program as compared to the 1980-81 program are depicted in Table 29. Approximately 69 percent of the students who liked the food choices liked the 1981-82 program more than the previous year's program. In comparison, only 15.2 percent of the students who disliked the food choices liked the 1981-82 more than the previous year's program. In addition, 26.1 percent of the students who disliked the food choices, compared to 5.9 percent of the students who liked the food choices, also liked the 1981-82 program less than the previous year's program. Therefore, the more the students liked the food choices the more they liked the 1981-82 program as compared to the 1980-81 program.

Table 30 represents the relationship between the students' attitudes toward the food choices and their participation in the 1981-82 program as compared to the 1980-81 program. Approximately one-third of the students who disliked the food choices participated less in the 1981-82

Table 29 - CROSSTABULATION OF STUDENTS' ATTITUDES TOWARD THE
 FOOD CHOICES AND THE 1981-82 PROGRAM
 AS COMPARED TO THE 1980-81 PROGRAM

Attitudes Toward the 1981-82 Program as Compared to the 1980-81 Program					
Attitudes Toward the Food Choices	Liked More Row %	Liked About the Same Row %	Liked Less Row %	No Comparison Row %	Row Total Number
Liked	68.9	21.8	5.9	3.4	119
Somewhat Liked	51.4	27.9	15.0	5.7	247
Somewhat Disliked	31.0	34.0	27.0	8.0	100
Disliked	15.2	43.5	26.1	15.2	46
$\chi^2=59.83$	df=9	p<.01	n=512		

Table 30 - CROSSTABULATION OF STUDENTS' ATTITUDES TOWARD
 THE FOOD CHOICES AND PARTICIPATION IN THE 1981-82 PROGRAM
 AS COMPARED TO THE 1980-81 PROGRAM

Participation in the 1981-82 Program as Compared to the 1980-81 Program					
Attitudes Toward the Food Choices	Participated More Row %	Participated About the Same Row %	Participated Less Row %	No Comparison Row %	Row Total Number
Liked	19.7	60.7	18.0	1.6	122
Somewhat Liked	16.0	52.4	26.0	5.6	250
Somewhat Disliked	10.9	45.5	36.6	6.9	101
Disliked	13.0	41.3	32.6	13.0	46
$\chi^2=22.63$	df=9	p<.01	n=519		

program as compared to the 1980-81 program. In comparison, only 13 percent of the students who disliked the food choices participated more during the 1981-82 program. Therefore, the students who disliked the food choices participated in the 1981-82 lunch program less than in the previous year's program.

A significant ($p < .01$) crosstabulation indicated that 61.8 percent of the parents who liked the food choices were satisfied with the program as compared to 2.9 percent of the parents who liked the food choices and were dissatisfied with the program. Therefore, parents who liked the food choices were more satisfied with the program than dissatisfied. Another significant ($p < .01$) crosstabulation indicated that 47.3 percent of the parents who liked the food choices liked the 1981-82 program more than the previous year's program as compared to 7.1 percent of the parents who liked the food choices and participated less.

Attitudes Toward Menu Variety

As a result of the 1980-81 food preference and frequency survey, those foods the students preferred were served more frequently during the 1981-82 academic year. The students were asked how they felt about the number of times a month the foods were served. Table 31 illustrates the

Table 31 - STUDENTS' ATTITUDES TOWARD
THE MENU VARIETY

Responses	Students	
	n	%
Liked	75	14.5
Somewhat Liked	196	37.8
Somewhat Disliked	158	30.4
Disliked	90	17.3
Total Responses	519	100.0

students' attitudes toward the menu variety. Most of the students (37.8%) somewhat liked the menu variety but 30.4 percent somewhat disliked the menu variety. More students disliked (17.3%) than liked (14.5%) the menu variety. However, the students' attitudes toward the menu variety was slightly more favorable than unfavorable.

A significant ($p < .01$) crosstabulation was found between the students' attitudes toward menu variety and their degree of program satisfaction. The relationship is illustrated in Table 32. The results indicated that 40 percent of the students who liked the menu variety were satisfied with the 1981-82 school lunch program as opposed to 4 percent who liked the menu variety and were dissatisfied with the lunch program. Also, 31.5 percent of the students who disliked the menu variety were dissatisfied with the lunch program as opposed to 3.4 percent of the students who disliked the menu variety and were satisfied. Therefore, the more the students liked the menu variety the more satisfied they were with the program.

Attitudes Toward the Kinds (or Types) of Food Served

As a result of the 1980-81 food preference and frequency survey, the kinds or types of food served were changed during the 1981-82 academic year to include more

Table 32 - CROSSTABULATION OF STUDENTS' ATTITUDES TOWARD THE MENU VARIETY AND THEIR DEGREE OF PROGRAM SATISFACTION

Attitudes Toward the Menu Variety	Degree of Program Satisfaction				Row Total Number
	Satisfied Row %	Somewhat Satisfied Row %	Somewhat Dissatisfied Row %	Dissatisfied Row %	
Liked	40.0	36.0	20.0	4.0	75
Somewhat Liked	17.3	37.8	36.2	8.7	196
Somewhat Disliked	5.7	24.7	51.9	17.7	158
Disliked	3.4	11.2	53.9	31.5	89
$\chi^2=113.08$	df=9	p<.01	n=518		

fast food and convenience items. The students' attitudes toward the kinds of foods served are depicted in Table 33. Approximately 49 percent of the students somewhat liked the kinds of food served and 24.5 percent somewhat disliked the kinds of food served. However, more students had favorable opinions than unfavorable opinions toward the kinds of food served.

Significant ($p < .01$) crosstabulations were found between the students' attitudes toward the kinds of food served and the following variables: degree of program satisfaction and attitudes toward the 1981-82 program as compared to the 1980-81 program. Table 34 represents the relationship between the students' attitudes toward the kinds of food served and their degree of program satisfaction. The results indicated that 44.4 percent of the students who liked the kinds of food served were satisfied with the lunch program and only 3.3 percent of the students who liked the kinds of food served were dissatisfied with the program. Therefore, the more the students liked the kinds of food served the more satisfied they were with the program.

The relationship between the students' attitudes toward the kinds of food served and their attitudes toward the 1981-82 school lunch program as compared to the previous year's program is illustrated in Table 35. Approximately two-thirds of the students who liked the kinds of food

Table 33 - STUDENTS' ATTITUDES TOWARD
THE KINDS OF FOOD SERVED

Responses	Students	
	n	%
Liked	90	17.3
Somewhat Liked	255	49.1
Somewhat Disliked	127	24.5
Disliked	47	9.1
Total Responses	519	100.0

Table 34 - CROSSTABULATION OF STUDENTS' ATTITUDES TOWARD THE KINDS OF FOOD SERVED AND THEIR DEGREE OF PROGRAM SATISFACTION

Attitudes Toward the Kinds of Food Served	Degree of Program Satisfaction				Row Total Number
	Satisfied Row %	Somewhat Satisfied Row %	Somewhat Dissatisfied Row %	Dissatisfied Row %	
Liked	44.4	27.8	24.4	3.3	90
Somewhat Liked	13.8	41.3	39.0	5.9	254
Somewhat Disliked	0.0	15.7	63.0	21.3	127
Disliked	0.0	2.1	31.9	66.0	47
$\chi^2=244.66$ $df=9$ $p<.01$ $n=518$					

Table 35 - CROSSTABULATION OF STUDENTS' ATTITUDES TOWARD THE
 KINDS OF FOOD SERVED AND THE 1981-82 PROGRAM
 AS COMPARED TO THE 1980-81 PROGRAM

Attitudes Toward the 1981-82 Program as Compared to the 1980-81 Program					
Attitudes Toward the Kinds of Food Served	Liked More Row %	Liked About the Same Row %	Liked Less Row %	No Comparison Row %	Row Total Number
Liked	66.3	22.5	2.2	9.0	89
Somewhat Liked	54.5	29.6	12.3	3.6	253
Somewhat Disliked	33.9	33.9	25.8	6.5	124
Disliked	15.2	28.3	39.1	17.4	46
$\chi^2=74.04$	df=9	p<.01	n=512		

served liked the 1981-82 lunch program more than the 1980-81 program and only 2.2 percent liked the 1981-82 program less than the previous year's program. In comparison, 39.1 percent of the students who disliked the kinds of food served liked the 1981-82 lunch program less and only 15.2 percent liked the program more. Therefore, the more the students liked the kinds of food served the more favorably they viewed the 1981-82 program.

Attitudes Toward the Pricing of Desserts

Effective at the beginning of the 1981-82 academic year, desserts were no longer included in the price of the Type A lunch, but were available on an a la carte basis. Students and parents were asked how they felt about the dessert being priced separately from the Type A lunch. Table 36 illustrates the students' and parents' attitudes toward the pricing of desserts.

The largest group of the students (37.3%) disliked the desserts priced separately and one-third of the parents (33.0%) liked the desserts priced separately. The parents had more favorable opinions than the students toward the desserts being priced separately.

A significant ($p < .01$) crosstabulation was found between the students' attitudes toward the pricing of desserts

Table 36 - STUDENTS' AND PARENTS' ATTITUDES TOWARD
PRICING DESSERTS SEPARATELY FROM THE TYPE A LUNCH

Responses	Students		Parents	
	n	%	n	%
Liked	89	17.2	115	33.0
Somewhat Liked	93	18.0	65	18.7
Somewhat Disliked	87	16.8	39	11.2
Disliked	193	37.3	100	28.7
No Response	56	10.8	29	8.3
Total Responses	518	100.0	348	100.0

separately and participation in the 1981-82 lunch program as compared to the previous year's program. The results are depicted in Table 37. Approximately 26 percent of the students who liked desserts priced separately also participated more during the 1981-82 program than the previous year's program. In comparison, only 13.5 percent of the students who disliked the desserts priced separately also participated more, but 34.2 percent of these students participated less. Therefore, the students who liked desserts priced separately participated more in the 1981-82 lunch program than in the previous year's program and the students who disliked desserts priced separately participated less.

Attitudes Toward the A La Carte Lunch Program

The service of a la carte food items was implemented in two of the larger high schools that had the lowest participation rates. These two schools were the only schools with an open-campus policy during the lunch period. The parents who had students attending these schools were asked one question concerning the a la carte program. The response rate to the question was quite small, as only 7 percent of the sample responded (n=35). Therefore, the result of the parents' question about the a la carte program is not

Table 37 - CROSSTABULATION OF STUDENTS' ATTITUDES TOWARD PRICING DESSERTS SEPARATELY AND PARTICIPATION IN THE 1981-82 PROGRAM AS COMPARED TO THE 1980-81 PROGRAM

Attitudes Toward Pricing Desserts Separately	Participation in the 1981-82 Program as Compared to the 1980-81 Program				Row Total Number
	Participated More Row %	Participated About the Same Row %	Participated Less Row %	No Comparison Row %	
Liked	25.8	44.9	21.3	7.9	89
Somewhat Liked	16.1	60.2	22.6	1.1	93
Somewhat Disliked	11.5	62.1	18.4	8.0	87
Disliked	13.5	48.2	34.2	4.1	193
No Response	12.5	44.6	32.1	10.7	56
$\chi^2=29.57$ $df=12$ $p<.01$ $n=518$					

included and no crosstabulations were performed.

The students were asked how many times a week they chose a la carte food items for their total lunch and how many times a week they chose a la carte food items in addition to their lunch. The results are depicted in Table 38. Approximately the same number of students selected a la carte food items for their total lunch as those who selected a la carte items in addition to their lunch. Those students (34.1%) who chose a la carte food items for their total lunch spent between 70¢ and 95¢ and those students (52.1%) who chose a la carte items in addition to their lunch spent between 10¢ and 35¢.

The students' attitudes toward the price of the a la carte food items and their attitudes toward the kinds of food served a la carte were assessed. The students' attitudes toward the price of the a la carte food items are based on the amount of food received and the results are depicted in Table 39. The same number of students thought the prices of the a la carte food items were about right (36.1%) and somewhat expensive (36.1%). However, more students thought the prices were expensive (16.9%) than inexpensive (3.6%).

The students' attitudes toward the kinds of food served a la carte are illustrated in Table 40. Approximately 49 percent of the students somewhat liked the kinds of food

Table 38 - DEGREE OF PARTICIPATION IN THE
A LA CARTE LUNCH PROGRAM

Responses	Students Choosing A La Carte Items for Their Total Lunch		Students Choosing A La Carte Items In Addition to Their Lunch	
	n	%	n	%
4 or 5 Times a Week	40	24.1	21	13.1
2 or 3 Times a Week	39	23.5	43	26.9
Once a Week	41	24.7	37	23.1
Never or Almost Never	46	27.7	59	36.9
Total Responses	166	100.0	160	100.0

Table 39 - STUDENTS' ATTITUDES TOWARD THE PRICES
OF THE A LA CARTE FOOD ITEMS

<u>Responses</u>	Students	
	n	%
Inexpensive	6	3.6
Somewhat Inexpensive	12	7.2
About Right	60	36.1
Somewhat Expensive	60	36.1
Expensive	28	16.9
Total Responses	166	100.0

Table 40 - STUDENTS' ATTITUDES TOWARD
THE KINDS OF FOOD SERVED A LA CARTE

<u>Responses</u>	Students	
	n	%
Liked	59	35.5
Somewhat Liked	82	49.4
Somewhat Disliked	18	10.8
Disliked	7	4.2
<hr/>		
Total Responses	166	100.0

served a la carte and 35.5 percent liked kinds of food served a la carte. More students had favorable opinions than unfavorable opinions of the kinds of food served a la carte. Further analysis with this data was not conducted since the sample of students in the schools with this program were not representative of the population.

DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

The primary purpose of this research study was to evaluate the impact of the 1981 Omnibus Budget Reconciliation Act on the performance objectives of the Montgomery County School Lunch Program and also to evaluate parents' and students' attitudes toward the changes made in the 1981-82 school lunch program. The purpose of this chapter is to discuss the results as they pertain to the following research questions.

1. To what extent did the 1981-82 Montgomery County School Lunch Program meet the following program objectives:
 - a. to provide 85 percent of the average daily student attendance with economical and nutritious meals?
 - b. to maintain revenue and expense figures at projected budget levels within each academic year?
2. To what extent did the 1981-82 program changes affect parents' and students' attitudes toward the school lunch program?

A further purpose of this chapter is to present conclusions about the Montgomery County School Foodservice's overall

effectiveness and to make recommendations for future program decision making.

Discussion of Program Objectives

The Omnibus Budget Reconciliation Act took effect on August 13, 1981, and reduced federal support for the NSLP by 15 percent. In anticipation of these federal budget cuts, the Montgomery County school foodservice administrators conducted a student school lunch survey during the 1980-81 academic year. The results of this survey were used, in part, in the decision making process as the program administrators developed program interventions to maintain program participation and other program objectives.

One objective of the Montgomery County School Lunch Program was to provide economical and nutritious meals to 85 percent of the average daily student attendance. Students' and parents' opinions were used to assess the extent to which economical and nutritious lunches were served. Even though the lunch prices were increased by 25 percent, the vast majority of the parents (73.2%) thought the lunch price was economical. A majority of students (57%), however, thought the lunch price was rather expensive or not economical. The opinions concerning the lunch price were based on the amount of food served. The parents' lack of awareness of

the amount of food served was expressed in the telephone interviews and could have influenced their opinions of the lunches' economic value. Students were less satisfied with the portion sizes received. However, in the telephone interviews the parents frequently referred to the rising cost of living and therefore they may have a better conceptual idea of what it costs to produce a meal. Therefore, the students' and parents' attitudes toward the economic value of the school lunches are conflicting.

The nutritional value of the school lunches was still determined by the Type A meal pattern. During the 1981-82 academic year, however, additional fast food items were served more frequently, as requested by the students. The nutritional value of the lunches was scored on a scale of 1 to 10 (1 being not nutritious and 10 being very nutritious). The parents reported a mean score of 7.6 and the students reported a lower mean score of 5.1. The student survey instrument labeled the scale as nutritious at the midpoint of 5 and the parents were not given this description. Therefore, this could account for the difference between the parents' and students' mean score. Based on the mean scores, the parents and students perceived that the lunches were nutritious.

Participation in the 1981-82 school lunch program were approximately 72.9 percent (including a la carte partici-

pation) which represents a 6.2 percent decrease in program participation from the previous year. However, since the changes in menu choices were not fully implemented in all the schools until March 1982 (two-thirds of the way through the school year), the effects that the 1981-82 program changes had on participation could not be accurately determined. In March 1983, approximately one year after the completion of the county-wide school lunch program changes, participation was approximately 77 percent (including a la carte participation) which was approximately a 4 percent increase in participation over the 1981-82 academic year. In comparison, participation during the academic year previous to the 1981 budget cuts, was approximately 79.1 percent, only 2 percent more than the March 1983 figures. Therefore, even though the program did not meet its program objective of 85 percent participation, school lunch participation has increased following a temporary decrease in participation during the 1981-82 academic year.

Another objective of the Montgomery County School Lunch Program was to maintain revenue and expense figures at projected budget levels within each year. A review of the 1981-82 budget projections and actual financial results indicated that even though there was a substantial reduction in federal reimbursement for the 1981-82 academic year an increase in lunch prices enabled the Montgomery County school

foodservice administrators to maintain their program within the projected budget levels. In fact, they even improved the academic year's balance or surplus of funds. This could be due, in part, to the fact that their actual expenditures were held at less than 90 percent of budgeted levels. However, these figures include the 25 percent increase in lunch prices, which more than compensated for the reduction in federal reimbursements. This could have also been compounded by the fact that other program interventions increased student participation more than the school foodservice administrators had anticipated. The actual sales were also increased over the projected sales as a result of pricing the desserts separately.

Attitudes Toward Program Changes

During the 1981-82 academic year the following changes were made as a result of the 1980-81 school lunch survey: more food choices were served, the foods students preferred were served more frequently, the desserts were priced separately from the Type A lunch, the lunch prices were increased and an a la carte lunch option was implemented in two high schools. The attitudes toward these changes were assessed in order to determine the extent to which the changes affected students' and parents' attitudes toward the

school lunch program. The largest percentage of students somewhat liked the number of food choices served and a substantial majority of parents liked the food choices. The difference between students' and parents' opinions could be attributed to the fact that the parent sample also represented elementary level students who previously did not have menu choices offered. The main reason the students and parents were satisfied with the 1981-82 school lunch program was because of the food choices served. In addition, the parents thought the menu choices resulted in greater school lunch participation. Therefore, implementation of a greater number of menu choices positively affected students' and parents' satisfaction with the 1981-82 school lunch program and also positively influenced student participation. This was also supported in the crosstabulation analysis. Other studies (Grant, 1969; Howe, 1979; Harper et al., 1980; Jansen et al., 1980) have also demonstrated that broader menu choices result in increased participation. The largest percentage of students somewhat liked the kinds of foods served and more students and parents were satisfied than dissatisfied with the school lunch program because of the kinds of food served. Approximately the same number of parents, however, thought students participated because of the kinds of food served. In addition, a larger number of parents felt the students participated less, rather than

more, in the 1981-82 lunch program because of the kinds of food served. Therefore, even though the kinds of food served have positively affected students' and parents' satisfaction with the 1981-82 lunch program, the extent to which the kinds of food served affect participation is unclear. This could be due to the fact that there were a relatively small number of parents responding to the questions regarding participation. Also, even though the majority of parents thought they were aware of the kinds of food served at school, since the changes in the menu items were not completely implemented until the month prior to the data collection period, the parents may not have been aware of the specific kinds of food served which were changed as a result of the students' food preferences. Grant (1969) found that students liked food served at home more than those served at school and therefore their dislike for the kinds of food served at school could actually be more of a food production problem, rather than a result of menu planning. This conclusion is supported by the fact that the students and parents were dissatisfied with the way the food was prepared and the parents also thought the students participated less in the 1981-82 school lunch program because of the way the food was prepared. Therefore, even though the kinds of food served during the 1981-82 academic year positively affected program satisfaction, the effects

on program participation are unclear but the discrepancy may be due, in part, to food preparation techniques. Previous research (Grant, 1969; Law et al., 1972; Howe, 1979) has found that students have not participated in the school lunch program because they disliked the way the food was prepared and they disliked the kinds of food served.

The results of the crosstabulations indicated that the more students liked the kinds of food served the more satisfied they were with the 1981-82 school lunch program. Also, the largest percentage of students somewhat liked the menu variety and the more the students liked the menu variety the more satisfied they were with the 1981-82 lunch program. Therefore, program satisfaction was positively affected by serving the kinds of food students prefer more frequently. Another concern of foodservice administrators was that service of fast food type menu items, more frequently, would affect parents' and students' perceptions of the nutritional value of the school lunches. However, the results indicated that the more nutritious the students thought the lunches were the more they liked the kinds of food served and the frequency in which the foods were served. Therefore, by serving the foods students prefer more frequently, the nutritional integrity of the program was not perceived to be adversely affected and in actuality it was not affected because the foodservice administrators still

adhered to the Type A meal patterns.

The majority of students (54.1%) disliked the desserts being priced separately from the Type A lunch; however, the majority of parents (51.7%) liked the desserts priced separately from the Type A lunch. The results also demonstrated that less participation in the 1981-82 lunch program was related to the students' dislike of the desserts being priced separately. In addition, parents who thought the lunches were more expensive also tended to dislike the desserts being priced separately. Therefore, pricing the desserts separately from the Type A lunch negatively affected student participation and parents' opinion of the economic value of the school lunch. Comments made during the telephone interviews demonstrated that parents were concerned about the nutritional value of the school lunch and therefore were more favorable toward the desserts being priced separately since fruit was still included in the Type A lunch.

As reported previously, the majority of the students (57.0%) thought the lunch price was rather expensive; however, the majority of parents (73.2%) thought the lunch price was economical. The attitudes toward the price of the lunch affected program satisfaction; for example, the price of the lunch was one of the main reasons why students were dissatisfied with the lunch program. Also, students and

parents were more satisfied with the lunch program when they perceived that the price of the lunch was economical. A small percentage of parents felt that the price of the lunch affected student participation and less participation in the 1981-82 school lunch program as compared to the previous year's program. These numbers are small, however, and may not represent the true effect the price of the lunch has on student participation. Further analysis demonstrated that students' attitudes toward the lunch price did not affect program participation.

Attitudes toward the a la carte lunch program were not fully assessed due to the small number of students in the sample who attended the schools with this option. However, based on the preliminary results obtained, the vast majority of students (84.9%) liked the kinds of food served a la carte and a smaller majority of students (53.0%) thought the prices of the a la carte food items were rather expensive. Since there were not any federal reimbursements for food sold a la carte the price of the food sold a la carte was high in comparison to the Type A lunch.

Conclusions

Overall, the Montgomery County School Foodservice administrators effectively dealt with an immediate drop in

participation and the reduction in federal funding. Even though program administrators did not attain the targeted 85 percent participation, the 1982-83 participation figures have increased by approximately 4 percent and are only 2 percent lower than the 1980-81 program participation figures. Based on the students' and parents' perceptions, the lunches served were relatively economical and nutritious. The program administrators were able to maintain the 1981-82 lunch program within the fiscal constraints and they also improved program participation and satisfaction through appropriate program changes.

Since the research design did not include a control group, the results of this research can provide only a preliminary look at the effectiveness of the program and no cause and effect relationships can be determined (Weiss, 1972). The random cluster sampling techniques provided representative samples of the two populations surveyed; however, the cluster sampling technique is not as accurate in estimating the population's performance and attitudes as a true random sampling technique (Popham, 1975). Since the samples were representative of the county-wide student enrollment the results are attributed to the County School Lunch Program as a whole, and therefore differences among the individual foodservice units could have skewed the results. The response rate to the telephone questionnaire

was 85 percent, representing an excellent response rate. Future research efforts could be improved by using a more sophisticated design including a smaller and more defined segment of the population in order that cause and effect results could be obtained.

Recommendations

The following recommendations are suggested for future program decision making.

1. Place more emphasis on production management and production techniques to assure improved and consistent food quality.
2. Improve public relations with parents and students in order to improve program participation.
3. Continue to involve students in the decision making process in order to improve program participation.
4. Conduct further study of the a la carte lunch program in order to demonstrate program effects.
5. Improve food merchandising efforts in order to improve program participation.

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APPENDIX A

CHART 1

SCHOOL LUNCH PATTERNS FOR VARIOUS AGE/GRADE GROUPS

U.S. Department of Agriculture, National School Lunch Program

USDA recommends, but does not require, that you adjust portions by age/grade group to better meet the food and nutritional needs of children according to their ages. If you adjust portions, Groups I-IV are minimum requirements for the age/grade groups specified. If you do not adjust portions, the Group IV portions in the shaded groups are the portions to serve all children.

COMPONENTS

		MINIMUM QUANTITIES					RECOMMENDED QUANTITIES ¹	SPECIFIC REQUIREMENTS
		Preschool ages 1-2 (Group I)	ages 3-4 (Group II)	Grades K-3 ages 5-8 (Group III)	Grades 4-12 ¹ ages 9 & over (Group IV)	Grades 7-12 ages 12 & over (Group V)		
MEAT OR MEAT ALTERNATE	A serving of one of the following or a combination to give an equivalent quantity: Lean meat, poultry, or fish (edible portion as served)	1 oz.	1 ½ oz.	1 ½ oz.	2 oz.	3 oz.	<ul style="list-style-type: none"> Must be served in the main dish or the main dish and one other menu item. Textured vegetable protein products, cheese alternate products, and enriched macaroni with fortified protein may be used to meet part of the meat/meat alternate requirement. Fact sheets on each of these alternate foods give detailed instructions for use. NOTE: The amount you must serve of a single meat alternate may seem too large for the particular age group you are serving. To make the quantity of that meat alternate more reasonable, use a smaller amount to meet part of the requirement and supplement with another meat or meat alternate to meet the full requirement. 	
	Cheese	1 oz.	1 ½ oz.	1 ½ oz.	2 oz.	3 oz.		
	Large egg(s)	1	1 ½	1 ½	2	3		
	Cooked dry beans or peas	½ cup	¾ cup	¾ cup	1 cup	1 ½ cup		
	Peanut butter	2 Tbsp.	3 Tbsp.	3 Tbsp.	4 Tbsp.	6 Tbsp.		
VEGETABLE AND/OR FRUIT	Two or more servings of vegetable or fruit or both to total	½ cup	½ cup	½ cup	¾ cup	¾ cup	<ul style="list-style-type: none"> No more than one half of the total requirement may be met with full strength fruit or vegetable juice. Cooked dry beans or peas may be used as a meat alternate or as a vegetable but not as both in the same meal. 	
BREAD OR BREAD ALTERNATE	Servings of bread or bread alternate	5 per week	8 per week	8 per week	8 per week	10 per week	<ul style="list-style-type: none"> At least ½ serving of bread or an equivalent quantity of bread alternate for Group I and 1 serving for Groups II-V must be served daily. Enriched macaroni with fortified protein may be used as a meat alternate or as a bread alternate but not as both in the same meal. NOTE: Food Buying Guide for School Food Service, PA-1257 (1980) provides the information for the minimum weight of a serving. 	
	A serving is: <ul style="list-style-type: none"> 1 slice of whole grain or enriched bread A whole grain or enriched biscuit, roll, muffin, etc. ½ cup of cooked whole grain or enriched rice, macaroni, noodles, whole grain or enriched pasta products, or other cereal grains such as bulgur or corn grits A combination of any of the above 							
MILK	A serving of fluid milk	¾ cup (6 fl. oz.)	¾ cup (6 fl. oz.)	½ pint (8 fl. oz.)	½ pint (8 fl. oz.)	½ pint (8 fl. oz.)	<ul style="list-style-type: none"> At least one of the following forms of milk must be offered: <ul style="list-style-type: none"> Unflavored lowfat milk Unflavored skim milk Unflavored buttermilk NOTE: This requirement does not prohibit offering other milks, such as whole milk or flavored milk, along with one or more of the above. 	

May 1980

¹Group IV is shaded because it is the one meal pattern which will satisfy all requirements if no portion size adjustments are made.

²Group V specified recommended, not required, quantities for students 12 years and older. These students may request smaller portions, but not smaller than those specified for Group IV.

APPENDIX B



VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

COLLEGE OF HUMAN RESOURCES

Blacksburg, Virginia 24061

DEPARTMENT OF HUMAN NUTRITION AND FOODS

March 8, 1982

Dr. Arnold J. Saari, Superintendent
Montgomery County School Board
P.O. Box 29
Christiansburg, VA 24073

Dear Dr. Saari:

For the last several weeks Diane Hoffnagle and I have been working with Barbara Antozzi developing a survey research study which will provide information concerning the school lunch program within Montgomery County. This study has been designed to accomplish the following objectives:

1. To identify the extent to which the 1981-82 lunch program and menu changes have affected student participation as compared to the previous academic year.
2. To identify the extent to which the 1981-82 lunch program and menu changes have affected student and parent satisfaction as compared to the previous academic year.
3. To test the students' and parents' knowledge of a "nutritional" meal and interpret the nutritional value of the students' lunch selections.
4. To identify the extent to which the 1981-82 increase in the price of lunch has affected the students' satisfaction of the Montgomery County School Lunch Program.

The methodology of this study involves two separate survey instruments. The first instrument is designed to collect data from students in grades 6-12. Approximately 360 students have been randomly selected in class clusters. A list of these clusters is attached. This portion of the study will require 15 minutes of class time. The time frame for this portion of the data collection is April 12-30, 1982.

Dr. Arnold J. Saari, Superintendent
Page -2-
March 8, 1982

The second portion of the study will involve an instrument designed to collect information from parents with children in grades 1-12. Approximately 370 students will be selected in classroom clusters. A list of these clusters is attached. It will require five minutes of class time to collect home telephone numbers from these students. The parents will then be contacted by telephone for completion of the survey instrument. It will require approximately ten minutes to complete the survey. In all cases, the students will be given a letter to take home which explains the purpose of the study and indicates that a researcher will be calling in the next few weeks. Copies of the survey instruments, and a letter which will be sent to the parents are attached. The data collection period for these activities will be April 15-30, 1982.

I have attempted to provide a brief overview of the planned survey. If you have specific questions, I will be most anxious to discuss them with you.

Sincerely,

Robert D. Reid

Robert D. Reid
Instructor
Food Service & Lodging Management

RDR/s

Enclosures

cc: Barbara Antozzi
Diane Hoffnagle

APPENDIX C

Montgomery County School Food Service
School Lunch Survey

School _____

Grade _____ Sex _____

The Montgomery County School Food Service Department is trying to find out what you think about the school lunch program. The results of this survey will be used in helping the department to evaluate the school lunch program.

DIRECTIONS: Please put all answers on this form. Circle one number for each question except when indicated differently.

1. How satisfied are you with the school lunches being served this year?

- | | |
|---------|--------------------------|
| Skip #3 | 1. SATISFIED |
| | 2. SOMEWHAT SATISFIED |
| | 3. SOMEWHAT DISSATISFIED |
| Skip #2 | 4. DISSATISFIED |

2. What are the main reasons you are satisfied with the types of lunches served this year? (You may check more than one.)

- ___ THE NUMBER OF TIMES A MONTH THE FOODS ARE SERVED
- ___ THE NUMBER OF CHOICES SERVED AT EACH MEAL
- ___ THE KINDS OF FOOD SERVED
- ___ THE TASTE OF THE FOODS SERVED
- ___ THE WAY THE FOOD IS PREPARED
- ___ THE PORTION SIZES OF THE FOOD SERVED
- ___ THE TEMPERATURE OF THE FOODS SERVED
- ___ THE PRICE OF THE STUDENT LUNCH (80c)
- ___ THE NUTRITIONAL VALUE (healthiness) OF THE FOODS SERVED

3. What are the main reasons you are dissatisfied with the types of lunches served this year? (You may check more than one.)

- ___ THE NUMBER OF TIMES A MONTH THE FOODS ARE SERVED
- ___ THE NUMBER OF CHOICES SERVED AT EACH MEAL
- ___ THE KINDS OF FOOD SERVED
- ___ THE TASTE OF THE FOODS SERVED
- ___ THE WAY THE FOOD IS PREPARED
- ___ THE PORTION SIZES OF THE FOOD SERVED
- ___ THE TEMPERATURE OF THE FOODS SERVED
- ___ THE PRICE OF THE STUDENT LUNCH (80c)
- ___ THE NUTRITIONAL VALUE (healthiness) OF THE FOODS SERVED

4. Compared to last year do you like the school lunch program:

- 1. MORE THIS YEAR
- 2. ABOUT THE SAME THIS YEAR AS LAST YEAR
- 3. LESS THIS YEAR
- 4. I WAS NOT HERE LAST YEAR

5. On the average, how many times a week do you eat a school lunch this year?
 1. 4 OR 5 TIMES A WEEK
 2. 2 OR 3 TIMES A WEEK
 3. ONCE A WEEK
 4. NEVER OR ALMOST NEVER
6. Compared to last year, do you eat a school lunch:
 1. MORE THIS YEAR
 2. ABOUT THE SAME THIS YEAR AS LAST YEAR
 3. LESS THIS YEAR
 4. I WAS NOT HERE LAST YEAR
7. Which of the following best describes how you feel about the number of food choices served at each meal?
 1. LIKE
 2. SOMEWHAT LIKE
 3. SOMEWHAT DISLIKE
 4. DISLIKE
8. Which of the following best describes how you feel about the number of times a month the foods are served?
 1. LIKE
 2. SOMEWHAT LIKE
 3. SOMEWHAT DISLIKE
 4. DISLIKE
9. Which of the following best describes how you feel about the kinds of food served this year?
 1. LIKE
 2. SOMEWHAT LIKE
 3. SOMEWHAT DISLIKE
 4. DISLIKE
10. Which of the following best describes how you feel about the desserts being priced separately from the student lunch?
 1. LIKE
 2. SOMEWHAT LIKE
 3. SOMEWHAT DISLIKE
 4. DISLIKE
 5. I DO NOT EAT DESSERT (Skip to #13)

17. From which of the following lunch lines do you usually pick your lunch meal?
1. HOT FOOD LINE
 2. SALAD BAR
 3. I ALMOST ALWAYS BRING A BAG LUNCH
 4. A LA CARTE LUNCH LINE
18. Do you have any other comments or suggestions about the school lunch program?

The sale of a la carte food items is a new addition to your school's lunch program this year. This allows you to choose whatever food items you like and pay for each item separately.

19. How many times a week do you choose a la carte food items to make up your TOTAL lunch meal?
1. 4 OR 5 TIMES A WEEK
 2. 2 OR 3 TIMES A WEEK
 3. ONCE A WEEK
 4. NEVER OR ALMOST NEVER (Skip to #22)
20. When you buy a la carte foods for lunch, which of the following foods do you usually pick to make up your TOTAL lunch meal? (Choose as many as apply.)
- MILK
 - JUICE
 - FRUIT
 - DESSERT
 - SANDWICH (or MAIN DISH)
 - VEGETABLE (includes TATER TOTS and FRENCH FRIES)
21. On the average, how much do you spend for lunch when you choose only a la carte food items?
1. 10¢ - 35¢
 2. 40¢ - 65¢
 3. 70¢ - 95¢
 4. \$1.00 OR MORE
22. How many times a week do you choose a la carte food items in addition to the student lunch or bag lunch from home?
1. 4 OR 5 TIMES A WEEK
 2. 2 OR 3 TIMES A WEEK
 3. ONCE A WEEK
 4. NEVER OR ALMOST NEVER (Skip to #25)

23. On the average, how much do you spend for a la carte food items when you choose them in addition to the student lunch?
1. 10¢ - 35¢
 2. 40¢ - 65¢
 3. 70¢ - 95¢
 4. \$1.00 OR MORE
24. Which of the following a la carte food items do you purchase 2 or more times a week? (You may choose more than one.)
- MILK
 - JUICE
 - COOKIES, DONUTS, CAKE, etc.
 - ICE CREAM
 - SANDWICH
 - FRENCH FRIES OR TATER TOTS
 - OTHER (Please Specify) _____
25. Based on the amount of food received how do you feel about the price of the a la carte food items?
1. INEXPENSIVE
 2. SOMEWHAT INEXPENSIVE
 3. ABOUT RIGHT
 4. SOMEWHAT EXPENSIVE
 5. EXPENSIVE
26. Which of the following describes how you feel about the kinds of food sold a la carte?
1. LIKE
 2. SOMEWHAT LIKE
 3. SOMEWHAT DISLIKE
 4. DISLIKE

5. Are you aware of what kinds of food are served in the school cafeteria?

1. YES
2. NO
3. SOMETIMES

Presently, a student lunch consists of the following meal components: meat, vegetable, fruit, bread and milk.

As a result of a student survey conducted last year we now serve:
-- food choices in the ELEMENTARY SCHOOLS

-- a larger selection of food choices, including a self-serve salad bar in the SECONDARY SCHOOLS

-- a la carte food items in which students may buy food items separately in BLACKSBURG AND CHRISTIANBURG HIGH SCHOOLS
ONLY

We are also serving those foods the students indicated they liked the most, more frequently.

6. How do you feel about the choices of food offered in the school cafeteria?

1. LIKE
2. SOMEWHAT LIKE
3. SOMEWHAT DISLIKE
4. DISLIKE

7. Would you like to explain why you feel this way?

This year the desserts are not included in the price of the student lunch. Instead, all desserts must be purchased separately or in addition to the student lunch.

8. Which of the following best describes how you feel about desserts being priced separately?

1. LIKE
2. SOMEWHAT LIKE
3. SOMEWHAT DISLIKE
4. DISLIKE
5. MY CHILD DOES NOT EAT DESSERT (Skip to *)

9. If desserts were served periodically and included in the price of a student lunch, how much more would you be willing to pay for a student lunch? (The full price of a student lunch is 80¢ in SECONDARY SCHOOLS and 75¢ in ELEMENTARY SCHOOLS and reduced price lunch is 40¢.)

1. NOTHING
2. 5¢
3. 10¢
4. 15¢
5. 20¢
6. MORE THAN 20¢

10. How many times a week do you feel desserts should be served?

1. EVERYDAY
2. 3 OR 4 TIMES A WEEK
3. 1 OR 2 TIMES A WEEK
4. LESS THAN ONCE A WEEK
5. NEVER OR ALMOST NEVER

*This year, the full price of a student lunch has increased from 60¢ to 75¢ in the ELEMENTARY SCHOOLS and from 65¢ to 80¢ in the SECONDARY SCHOOLS and the price of a reduced price lunch has increased from 20¢ to 40¢.

11. Based on the amount of food received how do you feel about the price of a student lunch this year?

1. INEXPENSIVE
2. SOMEWHAT INEXPENSIVE
3. ABOUT RIGHT
4. SOMEWHAT EXPENSIVE
5. EXPENSIVE

12. Would you like to make any additional comments about the price of a student lunch?

13. What do you think about the a la carte lunch program? (For BLACKSBURG AND CHRISTIANSBURG HIGH SCHOOL students' parents ONLY)

14. What foods or types of foods do you feel make up a nutritious or healthy lunch?

15. On a scale from 1 to 10, how nutritious do you feel the school lunches are? (10 being very nutritious and 1 being not nutritious)
-
16. How satisfied are you with the type of lunches served this year?
1. SATISFIED
 2. SOMEWHAT SATISFIED
 3. SOMEWHAT DISSATISFIED
 4. DISSATISFIED
17. What are the main reasons you are (satisfied, dissatisfied) with the types of lunches served this year?

NOTE: If a parent has difficulty responding offer the following choices:

1. TYPES OF FOOD SERVED
 2. TASTE OF THE FOOD SERVED
 3. THE WAY THE FOOD IS PREPARED
 4. TEMPERATURE OF THE FOOD SERVED
 5. NUMBER OF FOOD CHOICES
 6. COST OF THE FOOD
 7. NUTRITIONAL VALUE OF THE FOOD
18. Compared to last year do you like the school lunch program:
1. MORE THIS YEAR
 2. ABOUT THE SAME THIS YEAR AS LAST YEAR
 3. LESS THIS YEAR
 4. WE WERE NOT HERE LAST YEAR
19. The school lunch program is a service offered by the Montgomery County School Board. Is it important to your family that this service be continued?
1. YES
 2. NO
 3. UNDECIDED
- why?
20. Which meal payment plan is your child on?
1. FREE
 2. REDUCED (40¢)
 3. FULL PRICE PAID (80¢)

21. Would you like to make any additional comments or suggestions about the school lunch program?

Thank you very much for your time and valuable input. Goodbye!

APPENDIX D

Coding of the Instruments

Student Survey

Question	Column #	Variable Code	Variable Label
School	4	1	Auburn Middle and High
		2	Shawsville Middle and High
		3	Blacksburg Middle
		4	Blacksburg High
		5	Christiansburg Middle
		6	Christiansburg High
Grade	5-6	7	Seventh
		8	Eighth
		9	Ninth
		10	Tenth
		11	Eleventh
		12	Twelfth
Sex	7	1	Female
		2	Male
#1	8	1	Satisfied
		2	Somewhat Satisfied
		3	Somewhat Dissatisfied
		4	Dissatisfied
#2 & 3	9-17	1	Reason Why Satisfied
		2	Not a Reason Why Satisfied
		3	Reason Why Dissatisfied
		4	Not a Reason Why Dissatisfied
#4	18	1	More This Year
		2	About the Same
		3	Less This Year
		4	Not Here Last Year
#5	19	1	4 or 5 Times a Week
		2	2 or 3 Times a Week
		3	Once a Week
		4	Never or Almost Never
#6	20	1	More This Year
		2	About the Same
		3	Less This Year
		4	Not Here Last Year
#7	21	1	Like
		2	Somewhat Like
		3	Somewhat Dislike
		4	Dislike

Question	Column #	Variable Code	Variable Label
#8	22	1	Like
		2	Somewhat Like
		3	Somewhat Dislike
		4	Dislike
#9	23	1	Like
		2	Somewhat Like
		3	Somewhat Dislike
		4	Dislike
#10	24	1	Like
		2	Somewhat Like
		3	Somewhat Dislike
		4	Dislike
		5	Don't Eat Dessert
#11	25	1	Nothing
		2	5¢
		3	10¢
		4	15¢
		5	20¢
		6	More Than 20¢
#12	26	1	Everyday
		2	3 or 4 Times a Week
		3	1 or 2 Times a Week
		4	Less Than Once a Week
		5	Never or Almost Never
#13	27-28	01	1
		02	2
		03	3
		04	4
		05	5
		06	6
		07	7
		08	8
		09	9
		10	10
#14	29	1	Inexpensive
		2	Somewhat Inexpensive
		3	About Right
		4	Somewhat Expensive
		5	Expensive
#15	30	1	Yes
		2	Maybe
		3	No
		4	No Opinion

Question	Column #	Variable Code	Variable Label
#16	31	1	Free
		2	Reduced
		3	Full Price Paid
#17	32	1	Hot Food Line
		2	Salad Bar
		3	Bag Lunch
		4	A La Carte
#19	33	1	4 or 5 Times a Week
		2	2 or 3 Times a Week
		3	Once a Week
		4	Never or Almost Never
#20	34-39	1	Yes
		2	No
#21	40	1	10¢ - 35¢
		2	40¢ - 65¢
		3	70¢ - 95¢
		4	\$1.00 or More
#22	41	1	4 or 5 Times a Week
		2	2 or 3 Times a Week
		3	Once a Week
		4	Never or Almost Never
#23	42	1	10¢ - 35¢
		2	40¢ - 65¢
		3	70¢ - 95¢
		4	\$1.00 or More
#24	43-49	1	Yes
		2	No
#25	50	1	Inexpensive
		2	Somewhat Inexpensive
		3	About Right
		4	Somewhat Expensive
		5	Expensive
#26	51	1	Like
		2	Somewhat Like
		3	Somewhat Dislike
		4	Dislike

Parent Survey

Question	Column #	Variable Code	Variable Label
School	4-5	01	Auburn Middle and High
		02	Shawsville Middle and High
		03	Blacksburg Middle
		04	Blacksburg High
		05	Christiansburg Middle
		06	Christiansburg High
		07	Christiansburg Primary
		08	Gilbert Linkous Elementary
		09	Riner Elementary
		10	Elliston Lafayette Elementary
		11	Bethel Elementary
		12	Christiansburg Middle
Grade	6-7	01	First
		02	Second
		03	Third
		04	Fourth
		05	Fifth
		07	Seventh
		08	Eighth
		09	Ninth
		10	Tenth
		11	Eleventh
		12	Twelfth
		Sex	8
2	Male		
#1	9	1	4 or 5 Times a Week
		2	2 or 3 Times a Week
		3	Once a Week
		4	Never or Almost Never
#2	10	1	More This Year
		2	About the Same
		3	Less This Year
		4	Not Here Last Year
#3 (Why Eat Less)	11-13	1	Kind of Food
		2	Price of Lunch
		3	Way Prepare Food
		4	Other
#3 (Why Eat More)	14-16	1	Kind of Food
		2	Menu Choices
		3	Convenience
		4	Other

Question	Column #	Variable Code	Variable Label
#3 (Why Participate)	17-19	1	Hot Lunch
		2	Nutritional Value
		3	Convenience
		4	Kind of Food
		5	Other
#4 (Why Don't Participate)	20-22	1	Price of Lunch
		2	Kind of Food
		3	Child Likes Food From Home
		4	Long Lines and No Time
		5	Other
#5	23	1	Yes
		2	No
		3	Sometimes
#6	24	1	Like
		2	Somewhat Like
		3	Somewhat Dislike
		4	Dislike
#8	25	1	Like
		2	Somewhat Like
		3	Somewhat Dislike
		4	Dislike
		5	Child Doesn't Eat Dessert
#9	26	1	Nothing
		2	5¢
		3	10¢
		4	15¢
		5	20¢
		6	More Than 20¢
#10	27	1	Everyday
		2	3 or 4 Times a Week
		3	1 or 2 Times a Week
		4	Less Than Once a Week
		5	Never or Almost Never
#11	28	1	Inexpensive
		2	Somewhat Inexpensive
		3	About Right
		4	Somewhat Expensive
		5	Expensive
#13	29	1	Like
		2	Dislike
		3	Don't Know

Question	Column #	Variable Code	Variable Label
#15	30-31	01	1
		02	2
		03	3
		04	4
		05	5
		06	6
		07	7
		08	8
		09	9
		10	10
#16	32	1	Satisfied
		2	Somewhat Satisfied
		3	Somewhat Dissatisfied
		4	Dissatisfied
#17 (Reasons Satisfied)	33-38	01	Kinds of Food
		02	Menu Choices
		03	Nutritional Value
		04	Child Likes
		05	Other
#17 (Reasons Dissatisfied)	39-44	01	Kind of Food
		02	Way Prepare Food
		03	Child Dislikes
		04	Portion Sizes
		05	Other
#18	45	1	More This Year
		2	About the Same
		3	Less This Year
		4	Not Here Last Year
#19	46	1	Yes
		2	No
		3	Undecided
#19 (Reasons Why Important)	47-49	1	Like to Have Option
		2	Benefit
		3	Economical
		4	Hot Lunch
		5	Convenience
		6	Bag Lunch Spoils
		7	Learning Experience
		8	Nutritional Value
#19 (Reasons Why Not Important)	50-51	1	Don't Like Food
		2	Able to Pack Nutritious Lunch
		3	Rather Lunch Go First
		4	Cheaper to Pack Lunch

Question	Column #	Variable Code	Variable Label
#20	52	1	Free
		2	Reduced
		3	Full Price Paid

APPENDIX E

SUMMARY SHEET OF ANTICIPATED QUESTIONS AND RESPONSES

Q. I have already been called.

A. Was it in response to your child in ___ grade and ___ school? If this child attends a different school then we would like you to answer the following questions about the school lunch program in this school.

Q. Who is sponsoring the survey?

A. The Montgomery County School Board.

Q. What is the purpose of this survey?

A. To find out what parents think about the school lunch program in order to help the foodservice department evaluate the program.

Q. Who is the person responsible for the survey?

A. Barbara Antozzi, the School Foodservice Dietitian.

Q. May I talk to her?

A. Yes, you may call the School Board Office.

Q. How did you get my phone number?

A. Students were contacted as a result of a random sampling of classes. Their phone numbers and first names were collected in class at which time we also gave them a letter to take home to their parents. This letter was sent to inform you that we would be calling you and why.

Q. How can I be sure this is authentic?

A. I can give you the number of the School Foodservice Department and you can speak to Barbara Antozzi. That number is 382-0295.

Q. Is this confidential?

A. Yes, most definitely! We do not know your name because we only obtained your child's first name. Also, results from the survey will not be recorded individually but as a group.

Q. Can I get a copy of the results?

A. The results will be publicized in the local paper sometime in June.

Reasons for Refusals and Possible Responses

Too Busy	This only takes about 10 minutes. Could I call back at a more convenient time?
Bad Health	I'm sorry to hear that. I would be happy to call back in a day or two. Would that be okay? <u>or</u> Could I speak to your spouse?
Feel Inadequate or don't know enough to answer	The questions are not difficult. They mostly concern how you feel about the school lunch program.
My child never eats a school lunch	That is okay. We would like to know why they do not eat a school lunch.
Not interested	It's awfully important that we get the opinions of everyone in the sample, otherwise the results won't be very useful. So, I'd really like to talk with you.
No one else's business what I think	I certainly understand. That's why all of our interviews are confidential. This is why we have not collected your child's last name; so we cannot identify you.
Objects to telephone surveys	We are conducting a phone survey because we could get more parents to respond if it took a minimum amount of time. This way is much faster and costs less too.

APPENDIX F

Data Analysis Crosstabulations

<u>Description of Independent Variable</u>	<u>Dependent Variables</u>
<u>Student Survey</u>	
Attitudes Toward Lunch Price (Question #14)	Question #1, 4, 5, 6, 7, 8, 9, 10, 13, 16, 17 Grade Level, Sex
Attitudes Toward the Nutri- tional Value of the Lunches (Question #13)	Question #1, 4, 5, 6, 7, 8, 9, 10, 12, 14, 16, 17 Grade Level, Sex
Factors Affecting Satis- faction and Dissatisfaction (Question #1 & 2) (conducted on each response)	Question #1, 4, 5, 6, 7, 8, 9, 10, 12, 13, 14, 16, 17 Grade Level, Sex
Attitudes Toward the Food Choice 16, 17 (Question #7)	Question #1, 4, 5, 6, Grade Level, Sex
Attitudes Toward the Menu Variety (Question #8)	Question #1, 4, 5, 6, 16, 17 Grade Level, Sex
Attitudes Toward the Kinds of Food Served (Question #9)	Question #1, 4, 5, 6, 16, 17 Grade Level, Sex
Attitudes Toward Pricing Desserts Separately Question #10)	Question #1, 4, 5, 6, 16, 17 Grade Level, Sex

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Attitudes Toward Lunch Price (Question #11)	Question #1, 2, 5, 6, 8, 15, 16, 18, 20 Grade Level
Attitudes Toward the Nutri- tional Value of the Lunches (Question #15)	Question #1, 2, 5, 6, 8, 10, 11, 16, 18, 20 Grade Level
Factors Affecting Satis- faction and Dissatisfaction (Question #17) (conducted on each response)	Question #1, 2, 3, 4, 5, 6, 8, 10, 11, 15, 16, 18, 20 Grade Level
Factors Affecting Participation (Question #3 & 4)	Question #1, 2, 5, 11, 15, 16, 17, 18, 20 Grade Level
Attitudes Toward the Food Choices (Question #6)	Question #1, 2, 5, 16, 18, 20 Grade Level
Attitudes Toward Pricing Desserts Separately (Question #8)	Question #1, 2, 5, 16, 18, 20 Grade Level

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