

A COMPARISON OF CAFETERIA AND FAMILY STYLE SERVICES
IN A NURSERY SCHOOL AS RELATED TO TEN FOODS

by

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CHAPTER I

INTRODUCTION

Great emphasis has recently been placed on attitudes and emotions of the young child related to eating patterns. In the feeding of young children the objective is not to provide food alone, as some persons once believed. People now realize that the attitude created toward eating and the way food is presented to the child will influence the child's particular food likes or dislikes. One of the goals of modern education in child nutrition is to offer the child an optimum diet and at the same time allow for semi-autonomous behavior on his part, rather than being too permissive or too rigid with the child when he is offered food.

This study was developed to (1) compare two methods of serving food at meal time to pre-school children in a nursery school environment, and (2) to study the possible influence of these two methods on the amounts of certain foods consumed, and on the attitudes of the children toward ten particular foods introduced to them as a part of this experiment.

The results of this study should be of value to the parents of young children as well as to professionals and students in child development.

Purpose of this Study

The purpose of this study was to compare the influence of two serving methods upon the acceptance of certain foods by pre-school

children as measured both by quantities of food consumed and the teacher's evaluation of the child's attitude toward these foods. The two serving methods chosen for this experiment were adaptations of what are familiarly termed "cafeteria" and "family style".

The specific objectives of this study were:

1. To compare the influence of two serving methods (namely cafeteria style and family style) used in a nursery school environment upon the acceptance or rejection of certain foods by pre-school children at the noon meal as measured from the study of ten particular foods.
2. To determine if some types of foods or particular foods were more readily accepted than other foods when one of these methods of service were used.

Limitations of this Study

The following limitations were recognized:

1. The number of subjects used for this experiment was rather limited in size.
2. A number of the subjects of this study were away from school for many days during the investigation period, especially during the winter quarter, due to the usual minor illnesses of children in this age group. This may have influenced the subject's responses of acceptance or rejection of foods.
3. A subject's behavior may have been affected from day to day by such factors as physical activities, impending illnesses,

weather, and the influence of other children sitting at the same table.

4. Some of the foods used for the comparisons were not served equal numbers of times.
5. The influence of one person assisting in serving in cafeteria style but the influence of many persons in family style.

CHAPTER II

REVIEW OF LITERATURE

There is abundance of literature on proper foods for children and how to discipline nursery school children at meal time, but there is a paucity of information concerning effects of methods of service upon individual foods consumed by pre-school children (1).

Food for Children

Each culture has developed its own specific eating patterns. The kind of food to be eaten, and the methods of eating, are to a large extent culturally determined. A child slowly grows into the adult cultural eating patterns, whatever they may be.

The newly born baby feels hunger sensations due to wave-like contractions of the stomach, which make him cry out. These painful hunger waves cease when the baby swallows food, and the child associates food with the hunger pains, which explains why a child likes to eat (2). The young baby's way of eating suggests some practical points. His plan requires, first, that in order to help this pain-food-relief sequence which makes eating pleasant, food must be supplied when the hunger cry is heard. Second, the enjoyable side of eating will be fostered if the surroundings of his early meals are made as comfortable as possible. Third, it will be valuable to the development of his taste if his peculiar likes and dislikes are taken into account as soon as he shows preferences (2).

Physiological research has established the fact that emotions of various kinds such as fear, anger, or excitement, influence directly the flow of gastric secretions that have to do with the digestion of food (3). The child who is angry, lonesome, excited by overstimulation at play or by fear, is in no condition to assimilate and digest his food.

Little children need foods to help them grow and to stay well most of the time. Therefore, good food for children means food which gives plenty of cell building material and energy. It is important that the American family diet be built upon milk and dairy products, meat, eggs, fish, poultry, vegetables, fruits, enriched and wholegrain cereals, since these foods consumed in adequate variety and amounts will furnish the needed energy and building materials for the growing body.

Although children's food cannot be too highly standardized, children like foods with a variety of texture. They react favorably to a variety in the texture and consistency of food. Children also prefer moist meats and vegetables rather than dry, hard, or gummy ones because the latter are difficult to swallow (4). Temperature extremes are unpleasant to most children; they like food when it is lukewarm in temperature, soft and fluffy. Strong flavored cooked vegetables are not very popular. The children like plain ordinary foods, uncomplicated by unusual and special sauces (5).

The Amount of Food Intake

No two children have exactly the same food needs. How much food a child should eat varies with age, sex, body structure, physical activity and his state of health. Children also vary from time to time in how much food they want to eat and what foods they prefer. The child's desire and demand for food varies much as the adult's does.

Sometimes children go on food "jags". If a child wants two or three eggs at a meal for awhile, some authorities in the field believe that it is all right to let him have it. In time the child will settle down and eat a normal meal. The overall pattern, from week to week and month to month, is the most important thing to keep in mind (4).

Davis' study, as quoted by Ilg (6), indicated that the child was quite capable of making an adequate selection of multiple choices of protective foods. The food available to him was all of good nutritive value. Wilson (7) states that in Davis' study the children had a tendency to select certain foods in "waves", eating large quantities of a favored food at one time, and very little, if any at all, at another time. The children were well nourished.

Food intake records (8), for periods of four to seven days of 1,242 Connecticut school children in grades five to eight, indicated the following:

The diets of rural children scored slightly higher than those of the city children particularly in fruits and vegetables. The diets of the girls were somewhat better than those of the boys. The foods most often lacking in the diets were green and yellow vegetables and the foods rich in ascorbic acid.

Food Habits of Children

Most food habits and attitudes are formed during infancy and the pre-school years. They are associated with the emotional and social development of a child from earliest infancy. Parents are faced with many problems in the training and care of their children, but those centering around the eating of their food are often the most defeating (9).

Martin (10) referred to Aldrich who reported that oversolicitation and urging on the part of parents were chiefly responsible for developing negativism in children. He instructed parents not to urge their children to eat if they did not want to do so.

Spock and Lowenberg (11) state that:

A parent who has been a feeding problem in his or her childhood is especially tempted to urge and force feedings even though he knows this will work in the wrong direction. When a parent keeps trying to persuade a child to eat more than he is eager for, the child will lose more of his natural appetite.

According to Wolf (12) most children are far more likely to develop satisfactory food habits if they are left to their own devices. Children can generally be trusted, if presented regularly with a variety of foods, to make their own selections as to what they want and how much they need (12). Careful studies of food behavior in young

children affirm that it is wiser to have more tolerance for the child's own choices and allow him a certain leeway in his fads and fancies (12). The key to developing good eating habits in children lies in our sympathetic understanding of the child himself and how he responds to food. Douglas (13) says that parents occasionally need to consult the child's preference about his food, but never to let the child feel that he dictates as to what he will and will not eat.

As reported by Wagner (14), Davis concluded from her experiments with feeding young children that there are three steps in the development of a selective appetite or food habits:

There is an initial period of universal sampling, providing both sensory experience with each food and opportunity, through repetition, for the association of taste and smell with the appearance of the food. The second step is a memory for the character of the experience, so that sampling becomes unnecessary. The third step is a passing over of likes and dislikes into active, aggressive desire for some foods and neglect and rejection of others.

Adults set the stage for children's eating for good or ill, and parents have a great function to perform in regard to children's eating (15). Kimbrell (16), in her study on eating behavior of pre-school children, found that none of the best eaters were in the homes of the mothers with the least education. As the academic education of the mother increased the eating behavior of the child improved.

Meade (17) states that food habits are just like any other kind of habit and very little attention has been given to the particular

way in which they were ingrained. They result from repetition of experience with specific foods, and the establishment of a preference for those to which one is accustomed.

Acceptance and Rejection of Foods

The problem of a child's like or dislike for food is part of the psychological, physical, social and emotional situations which may have been built up over a long period of time (18). The most often cited reason for disliking a given food is that "it does not taste good." Texture and smell are other reasons mentioned more than five per cent of the time (19). The esthetic appeal of the food itself has a great effect upon appetite. Color in the food served pleases and interests the child. Long studies of the reactions of children toward color in the menu indicate that it is a significant factor.

In teaching children to like wholesome foods, it is necessary to vary the menus from day to day with the foods which are wholesome. The child who has been correctly fed will not tire of this simple diet nor crave many new foods if a few new ones are added from time to time. Barnes (20) emphasizes that the diet should be a balanced one, that means supplying each day for the body all that it needs in the necessary quantity.

Lowenberg (21) believes that a food dislike is associated with early home experiences centering around that food. The young child usually follows the example of his parents, his older brother and sister or other children and adults with whom he comes into close contact.

At the University of California Nursery School (22), a study was made on cooked and raw vegetables and fruits served as finger foods. Of cooked vegetables 71 per cent were rejected, while only 35 per cent of raw vegetables and fruit finger foods were rejected. Only peas and carrots, of the cooked vegetables, were accepted by more than 50 per cent of the children (23). Dietary surveys show that children of all ages often fail to eat vegetables in desirable amounts. In the study (10) of 60,000 children of all school ages, a small proportion of the children reported eating recommended amounts of green and yellow vegetables more than of any other food group. Lamb and Ling (23) found that children preferred highly sweetened food items to unsweetened ones, and meats to vegetables. The nursery school children of Texas Technological College had a tendency to like least green and yellow vegetables of all major divisions and for this lack of interest to increase with age.

Learning New Foods

Young children tend to refuse new foods. One of the greatest difficulties when introducing a new food is that usually too much of it is presented to the child, and an emotional situation develops over his objection to eating it. Children's attitudes toward new foods depend to a great extent on how new foods are offered. Pleasant experiences with new foods go far toward acceptance of other new foods.

Barnes (20) recommends the following procedures for introducing new foods:

Serve only one new food at a time. Avoid talking of anyone's dislike of foods. Be firmly persistent in expecting the child to eat what he should eat. Eating should be a happy experience-free from excitement and distraction.

Children are likely to be interested enough to taste the new food, but if they do not it is best to ignore the refusal and to try the food again at another time. Langford (24) believes that a new food always should be introduced in very small servings. It is good to offer it several times, but if the child shows any specific dislike it is best to delete that food for the present time and to substitute another with similar nutritional qualities. If this is done, the child will be much more likely to approach the food later in an accepting manner. Grownups often have a tendency to try to force their attitudes on the children whom they guide. Wagner (14) suggests that one stimulate the child's natural curiosity about a food by acquainting him with the new food before it is prepared, and introduce it with familiar, well-liked foods when they are served. Dowler (25) found that new foods introduced at the hungriest time will be more likely to have a pleasant sensation. Unfamiliar foods are best served early in the meal, in small quantities while the child is still hungry.

In order to encourage a child to eat, it is important to arrange bright, appealing colored food on his plate, to offer the proper food, and to give some encouragement - even help if necessary - and then the child's appetite will decide. Wolf (12) recommends that if the child

refuses to eat within about half an hour then the meal should be removed. In removing the meal the attitude of the mother needs to be one of friendly indifference. Otherwise the child has found a way in which he can disturb his all powerful mother. Barnes and Bradbury (20, 26) suggest praising a child for trying to eat in order to grow strong.

A four month study was made, of 100 children attending the two nursery schools of Merrill-Palmer, to find out the reactions of children to new foods. Results indicated that:

A large percentage of the children objected to new food the first time it was served; and that a large number ate the food the second time it was served; and that by the fourth time it was served practically all the children ate it without protest though some children were less enthusiastic about it than others (18).

Influence of Nursery School in Food Intake

When children enter nursery school, they enter with a long past as far as eating goes. They had many previous experiences with food. These experiences were satisfying or unsatisfying in varying degrees. Therefore, the child's attitude may be favorable or unfavorable toward food (27).

A study of the food preferences of a group of pre-adolescents showed that the foods eaten during the pre-school year were the ones liked by the pre-adolescent (20).

At the Western New Mexico University Nursery School (28) a questionnaire was constructed to implement the study of food acceptance

of nursery school children. Analysis of data on the questionnaire from parents and pupils of the nursery school indicates:

1. According to the parents, food acceptances apparent at nursery school do carry over to the home.
2. Former nursery school children do select foods other than sweets to a greater extent than do the non-nursery school children.
3. Poor acceptance of certain foods in early years may be due in part to lack of familiarity with the foods.
4. Children's food acceptances are determined in part by what is offered in the home.

In nursery school, usually, small portions of foods are served, with an opportunity for second servings. This inspires a much greater desire for food than large portions, and has the further advantage of helping the child to form the habit of finishing what is placed on his plate, since the portions can usually be eaten without undue effort.

It is claimed by Ilg (16) that children act very differently in school and at home, as they would eat vegetables in nursery school and would not eat them at home.

Summary

A healthy child normally likes to eat, and he eats until he is satisfied unless he has had unpleasant experiences in connection with eating. A child enjoys eating because eating satisfies a basic need. To be hungry and then to eat is one of the most satisfying things that anyone can do.

When a child relishes his food, he is likely to be happily adjusted to his environment. If he fails to eat well this may be a symptom of an emotional disturbance, which may have built up because a parent is anxious to have a child eat more than he wants to, or from psychological, social, and physical disturbances.

CHAPTER III

PROCEDURE

The purpose of this study was to compare the influence of two serving methods used at the noon meal on the acceptance of new foods by pre-school children in a nursery school situation. The experimental period covered the fall quarter, 1964 and the winter quarter, 1965; and from the data collected, the food likes, dislikes, and changes in attitudes toward certain foods were determined.

Subjects

Although 16 children were enrolled at the University Nursery School at the Virginia Polytechnic Institute, where the experiment was conducted and records were kept for all of these children, however, results are reported for only 12 children, since these were the children who were in attendance at the nursery school throughout the study. Of the twelve children, six were girls and six were boys; and their ages at the beginning of the study ranged from two years, four months to four years, seven months. The ages and sexes of subjects are listed below:

Subjects	Sex	Age Years	Months
1	Female	2	4
2	Male	3	2
3	Female	3	3
4	Female	3	5
5	Female	3	6

Subjects	Sex	Age Years	Months
6	Female	3	6
7	Male	3	7
8	Male	3	8
9	Female	3	10
10	Male	4	0
11	Male	4	5
12	Male	4	7

Styles of Service

Previous Style: In previous years the dietitian at the nursery school had served on each child's plate some of all foods included on the menu for that day, and the children were encouraged to eat all of the food served.

A typical luncheon menu in previous years, as was also the case for the experiment reported here, consisted of (1) meat or meat substitute; (2) two vegetables or a vegetable and a fruit; (3) sandwich made with whole wheat bread; (4) milk; and (5) a milk, fruit, or other suitable dessert.

Also in previous years a continuous record of the eating habits, food likes and dislikes of the children was maintained by the dietitian therefore each child's plate was served in accordance with a study of these likes and dislikes. For example, if the record showed that a child had never eaten a certain food or disliked it, no more than a half a teaspoon of this particular food would be served to the child until he demonstrated

that he liked the food and would eat more of it. The normal amount of any food served to a child, even when he ate it with relish, was never more than one tablespoon per year of age. In other words, if a three-year-old child liked mashed potatoes, the dietitian would serve him approximately three tablespoonfuls of that food. If, after a child ate the food served on his plate, he wished more of any or all foods on the menu for that day he was free to serve himself in any quantity he desired.

Experimental Styles of Service: Two methods of serving were used in this investigation. The cafeteria style service was introduced during the fall quarter, 1964, and the family style service was initiated and used for the winter quarter, 1965. With both methods the children were free to eat as much as they wanted, or were free not to choose any of the food at all.

Cafeteria Style: For the cafeteria style of service, the food, after being prepared in the nursery school kitchen was brought by the cook in bowls or other appropriate serving dishes to the dining room serving table and placed on the serving table in such a manner that the children could serve themselves easily. Children were divided into two groups according to their ages. The younger group, before going to the table to serve themselves, located their places at the table where they would eat. Then they went to the serving table to choose the amount and the kind of food they wished to have. A teacher held the child's plate for him so that the child had both his hands free to place his own food on his plate. Each child was free to select as much or as little food as he wanted; in like manner he was also free not to choose to take any

of the food if he so desired. After the younger group had served themselves, the older group went through the same routine.

When portions were taken the child went to his table and sat down to eat what he wished to eat from his plate. A four-ounce glass filled with milk was already placed at his plate and an additional pitcher of milk was on the table if he wished more. A plate of sandwiches was also on the table from which the child could serve himself if he wished to do so. After the child had finished as much of the food on his plate as he wished, had drunk the amount of milk he wanted and had eaten sandwiches, if he cared to do so, he returned with his plate to the serving table and placed it on the food cart in a section provided for dirty dishes. He then chose a dessert from three sizes offered to him, which he took to his table to eat. As soon as he finished with the first dessert he could get seconds of it or more food from the main course, sandwich, or milk, and in the order he chose to eat them. For example, a child could choose dessert from any of the three sizes offered, small size which was equal to about one tablespoon, medium that was equal to three or more tablespoons, and large - that was four or more tablespoons. A child was allowed to have as many seconds as he wanted of meat, vegetables, sandwich, milk and dessert.

Family Style: The food was cooked in the nursery school kitchen, served into small serving bowls or other appropriate dishes and brought to be placed on the four dining tables where the subjects and teachers ate. Also placed on these tables were the milk and sandwiches. In the

same manner as was used for the fall quarter, the younger age group first found their places and went to their tables. Then the older age group did likewise.

All food was placed on the table, except for the dessert. The teacher passed the food around the table and the children could choose or refuse anything of the main dishes, such as meat or vegetables.

Teachers brought dessert to the table when a child was through eating the main course. Children took their plates, placed them on the food cart, and picked up empty dessert plates from the serving table. The subjects served the dessert to themselves at their own tables with the help of their teacher, just as had been done with the other foods. After they had gone through this routine, they were free to take seconds of dessert, main dish or both, if they wished to do so. Seconds of the foods were placed on the serving table, so the teachers could refill their serving bowls at each table, if they became empty.

Mealtimes Routines: In addition to the routines established appropriate to the particular type of service, the following routines were studied and used by the teachers for both types of service:

1. An eating diagram outlining daily routines and procedures was placed on the bulletin board every day.
2. Children found their chairs with picture symbols. Each child had a chair with his picture on it; for example, a girl or a boy would have the picture of a rabbit, ball, red bird, wagon, etc.

3. Children were encouraged to eat food in this manner but they were not obliged to do so:
 - (a) Food on plate and first glass of milk
 - (b) Second glass of milk and sandwich
 - (c) Eat dessert
 - (d) Then seconds as desired
 - (e) The children were asked if they wished to have any more food after the children have gone through routine
4. When the children were through eating, they placed on the food cart, which was close to the serving table:
 - (a) First the dessert plates, since the main dish plates were on the cart already
 - (b) Then the glass
 - (c) Next the silverware
 - (d) At the end, the place mat and napkin.
5. Children now were ready to go through the toilet routine.

Development of Menus

The menus for the entire experiment were planned during the spring and summer of 1964. A copy of these menus is included in the appendix.

Exactly the same menus were used for the fall and winter quarter except for ten particular foods, which were as follows:

Food	Cafeteria Style Fall Quarter	Family Style Winter Quarter
meat	lamb patty	liver patty
vegetables	brussel sprouts	broccoli
sandwich	parsley-butter	cream cheese
canned fruit	prune plums	apricots
dessert	rice pudding	tapioca pudding

Actually the entire list of menus were planned around the ten foods. Most of the foods were served once a week for a period of eight and a half weeks except for the parsley-butter sandwiches and the rice pudding. Rice pudding was served eight times instead of nine due to Thanksgiving vacation and the parsley-butter sandwiches were served only seven times due to unavailability of the parsley on one occasion and to Thanksgiving vacation.

In the winter quarter all of the foods were served eight times except for the tapioca pudding which was served nine times.

After the menu committee chose the foods to be tested, the quarter in which the foods would be used was determined by chance. Each pair of foods were selected due to the fact that they were new foods to most of the children and were similar enough in flavor or texture that the menu committee considered them comparable for the experiment.

Data Collection

A faculty member helped the children to serve themselves in the cafeteria style serving method. The nursery school director, a graduate assistant, and student teachers ate with the children, with three to four children and one teacher at each table. While they were eating the teachers observed the children and kept records relating to the eating behavior of the children. Although on occasions the teachers offered the children some verbal encouragement to eat, the children were in no way required to eat the food or even to taste it if they did not wish to do so.

Daily records were kept by student teachers and the investigator on the sizes and seconds of the specific five foods for each quarter as well as of the child's comments and teacher's observations of each child in relation to those foods.

Record Keeping

Records were kept of the size of food servings selected by the child, teacher's observations and child's comments. In the appendix is an example of the data sheets of the child's likes or dislikes of food as well as of the teacher's observations of the child in relation to food, and the child's comments about the particular ten foods.

A week and a half at the beginning of each experiment was used as an adjustment period to familiarize the investigator, teachers and subjects with the routines involved. Following the adjustment period, during the fall quarter, experimental data were collected

for the cafeteria style service. Data were collected for the same length of time during the winter quarter. Results reported for this experiment are for the eight and a half weeks of each quarter, not for the adjustment periods.

Occasionally record taking for a subject had to be postponed for some days because he was ill or out of town. Many of the children were sick during the winter quarter.

CHAPTER IV

RESULTS

This chapter is devoted to the interpretation of the data collected when comparing cafeteria style and family style serving methods. The subjects were 12 children enrolled at the University Nursery School, of the Virginia Polytechnic Institute, Blacksburg, Virginia.

A Comparison of Cafeteria and Family Style Serving Methods as Related to Acceptance of Two Meats

Table 1 is a summary of the number of portions, number of times of seconds, and number of times of leftover lamb patty served by the cafeteria method of service. Comparable information on the liver patty served by the family style is recorded in Table 2.

In Table 3 is shown the comparison between the two methods used to serve meat patty. The percentage of lamb patty consumption served with cafeteria style was 70.6 percent, however, that of family style was 40.4 percent. No seconds of liver patty, served family style, were taken by any of the subjects.

These percentages were obtained by determining the ratio of food that was actually consumed relative to the total amount of food that was taken.

The number of times of meat leftover, per day, per child, in the family style was slightly higher than in the cafeteria style.

First servings were noted arbitrarily as "small", "medium", or "large"; the relative size of second servings is not included in any of the tables.

Typical comments, made by the children about the lamb patty, revealed their like or dislike of it.

Most of the children expressed a like for the bacon which was around the liver patty but not for the patty itself.

TABLE 1

FIRST SERVINGS, SECONDS, AND LEFTOVERS OF LAMB PATTY
USING THE CAFETERIA STYLE METHOD

Subjects	Number of times no food chosen	Number of first serving chosen	Number of second serving chosen	Number of times food left on plates
1	0	5.5	1	0
2	0	4.0	0	1
3	0	5.5	3	0
4	0	4.5	2	2
5	0	4.3	0	0
6	0	3.5	0	3
7	0	3.8	0	4
8	0	4.0	0	0
9	0	7.5	0	1
10	0	6.5	0	1
11	0	7.0	0	2
12	0	6.0	0	1
Total	0	62.0	6	15
Average	0	5.2	0.5	1.3

TABLE 2

FIRST SERVINGS, SECONDS, AND LEFTOVERS OF LIVER PATTY
USING THE FAMILY STYLE METHOD

Subjects	Number of times no food chosen	Number of first serving chosen	Number of second serving chosen	Number of times food left on plate
1	0	9.0	0	4
2	1	5.5	0	5
3	4	1.5	0	1
4	0	7.0	0	1
5	0	8.0	0	6
6	4	0.0	0	0
7	3	3.0	0	3
8	2	2.0	0	2
9	3	2.0	0	1
10	0	6.0	0	3
11	5	2.0	0	1
12	6	1.0	0	1
Total	28	47	0	28
Average	2.3	3.9	0	2.3

TABLE 3

A COMPARISON OF CAFETERIA AND FAMILY STYLE METHODS OF SERVICE

	Cafeteria Style Lamb Patty	Family Style Liver Patty
Times Given	9.0	8.0
Average Number of First Servings Chosen Per Child	0.6	0.5
Average Number of Seconds Chosen Per Child	0.1	0.0
Average of First Servings and Seconds Chosen Per Child	0.7	0.5
Percent of Rejections Over the Entire Serving Time	0.0	28.1
Number of Times Food Left Per Child	0.2	0.3
Number of Servings Consumed Per Child	0.4	0.2
Percentage of Times Food Taken was Consumed	70.6	40.4

A Comparison of Cafeteria and Family Style Serving Methods
as Related to Acceptance of Two Vegetables

In Table 4 is recorded the number and approximate sizes of first servings chosen, number of second servings and the number of times each subject left brussel sprouts on his plate when brussel sprouts was served by the cafeteria style of service. In Table 5 is the data obtained from using the family style method of serving broccoli.

From a study of Table 6, it is evident that the percentage of vegetables consumed by the cafeteria style, 73.1 percent, is slightly higher than that of family style, 71.7 percent.

Interesting to note is the percentage of rejections of brussel sprouts served by the cafeteria style was 7.8 percent, while that of broccoli served by family style method was 35 percent. The number of seconds, however, in the family style exceeded that of cafeteria style.

The amount of brussel sprouts consumed using the cafeteria style of service was greater than that of broccoli consumed using the family style of service.

Some children commented that brussel sprouts tasted like a leaf. As for broccoli, many of the subjects, said it reminded them of a tree.

TABLE 4

FIRST SERVINGS, SECONDS, AND LEFTOVERS OF BRUSSEL SPROUTS

USING THE CAFETERIA STYLE METHOD

Subjects	Number of times no food chosen	Number of First Servings Small Size	First Servings Chosen Medium Size	First Servings Chosen Large Size	Number of second serving chosen	Number of times food left on plates
1	0	4	4	0	0	0
2	0	6	3	0	1	7
3	0	4	5	0	4	5
4	0	1	7	1	1	0
5	1	4	5	0	0	1
6	0	6	1	1	0	8
7	0	3	5	0	0	0
8	1	6	1	0	0	1
9	0	5	3	0	1	2
10	0	1	1	4	0	1
11	0	9	0	0	0	3
12	0	6	1	0	0	0
Total	2	55	36	6	7	28
Average	0.2	4.6	3.0	0.5	0.6	2.3

TABLE 5

FIRST SERVINGS, SECONDS, AND LEFTOVERS OF BROCCOLI
USING THE FAMILY STYLE METHOD

Subjects	Number of times no food chosen	Number of First Servings Chosen			Number of second serving chosen	Number of times food left on plates
		Small Size	Medium Size	Large Size		
1	1	3	3	0	4	2
2	4	0	2	1	0	3
3	0	2	2	1	2	2
4	0	0	1	5	8	0
5	4	1	1	1	2	0
6	4	0	0	0	0	0
7	6	2	0	0	0	2
8	2	0	2	0	0	0
9	3	0	2	1	0	1
10	0	1	3	1	0	3
11	4	2	0	0	0	2
12	5	0	0	0	0	0
Total	33	11	16	10	16	15
Average	2.8	0.9	1.3	0.8	1.3	1.3

TABLE 6

A COMPARISON OF CAFETERIA AND FAMILY STYLE METHODS OF SERVICE

	Cafeteria Style Brussel Sprouts	Family Style Broccoli
Times Given	9.0	8.0
Average Number of First Servings Chosen Per Child	0.9	0.4
Average Number of Seconds Chosen Per Child	0.1	0.2
Average of First Servings and Seconds Chosen Per Child	1.0	0.6
Small	0.5	0.1
Medium	0.3	0.2
Large	0.1	0.1
Percent of Rejections Over the Entire Serving Time	7.8	35.0
Number of Times Food Left Per Child	0.3	0.2
Number of Servings Consumed Per Child	0.7	0.4
Percentages of Times Food Taken Was Consumed	73.1	71.7

A Comparison of Cafeteria and Family Style Serving Methods
as Related to Acceptance of Two Kinds of Sandwiches

In Table 7 is shown tabulation from the experimental cafeteria style method which is based on the number of portions, number of seconds and the number of times of leftover parsley-butter sandwich. Table 8 gives similar information on the cream-cheese sandwich served by family style method of service. The contrasts between the two methods which have been tabulated from Tables 7 and 8 is recorded in Table 9.

The percentage of sandwich consumption served by cafeteria style was 92.6 percent, however, that of the family style was 40.3 percent. The above finding shows that the children accepted more readily the food served by cafeteria style, since the subjects consumed more food by that experimental method than with the family style method.

All the results, from Table 9, indicated that the cafeteria style serving method was more favorable than the family style serving method.

The subjects were very curious about what was in the sandwiches, and they frequently asked: "What kind of sandwiches are these"?

TABLE 7

FIRST SERVINGS, SECONDS, AND LEFTOVERS OF PARSLEY-BUTTER SANDWICH
USING THE CAFETERIA STYLE METHOD

Subjects	Number of times no food chosen	Number of first serving chosen	Number of second serving chosen	Number of times food left on plates
1	1	5	0	0
2	1	6	5	0
3	0	7	13	0
4	0	6	0	0
5	0	7	1	4
6	7	0	0	0
7	0	5	1	0
8	1	6	1	0
9	0	7	3	2
10	0	4	3	0
11	0	7	1	0
12	0	6	1	0
Total	10	66	28	7
Average	0.8	5.5	2.3	0.6

TABLE 8

FIRST SERVINGS, SECONDS, AND LEFTOVERS OF CREAM-CHEESE SANDWICH
USING THE FAMILY STYLE METHOD

Subjects	Number of times no food chosen	Number of first serving chosen	Number of second serving chosen	Number of times food left on plate
1	2	5	1	2
2	7	1	0	1
3	1	6	0	6
4	0	7	5	2
5	0	8	6	2
6	3	1	0	1
7	3	5	0	5
8	1	3	0	2
9	4	2	0	2
10	0	5	3	0
11	0	6	0	1
12	4	3	0	3
Total	25	52	15	27
Average	2.1	4.3	1.3	2.3

TABLE 9

A COMPARISON OF CAFETERIA AND FAMILY STYLE METHODS OF SERVICE

	Cafeteria Style Parsley-Butter Sandwich	Family Style Cream-Cheese Sandwich
Times Given	7.0	8.0
Average Number of First Servings Chosen Per Child	0.8	0.6
Average Number of Seconds Chosen Per Child	0.3	0.2
Average of First Servings and Seconds Chosen Per Child	1.1	0.8
Percent of Rejections Over the Entire Serving Time	11.4	26.3
Number of Times Food Left Per Child	0.1	0.3
Number of Servings Consumed Per Child	1.1	0.4
Percentages of Times Food Taken Was Consumed	92.6	40.3

A Comparison of Cafeteria and Family Style Serving Methods
as Related to Acceptance of Two Canned Fruits

In Table 10 is given the results of the experimental cafeteria method including the number and approximate sizes of first servings chosen, number of second servings and the number of times each subject left prune plums on his plate, when prune plums were served by the cafeteria style of service. Comparable information on the use of apricots served by the family style of service is recorded in Table 11. In addition, Table 12 shows the contrasts between the two serving methods which have been tabulated from the two previously mentioned sets of data.

From Table 12 it is evident that the difference in percentage of food consumption by the cafeteria and family style was insignificant since the percentage of canned fruit consumption with cafeteria style was 84.1 percent, and that of family style, 84.8 percent.

The percentage of rejections and number of times of leftover food with cafeteria style were higher than that of the family style. From the above statement one can expect that the experimental family style method was slightly better than the cafeteria style method.

Comments made by children when prune plums were served: "This tastes sour". "This gives me hiccups". "These are sour".

Many children confused the apricots with peaches "I'll take a little bite to see if its apricots or peaches". "Peaches, peaches", some children said when they saw the apricots.

TABLE 10

FIRST SERVINGS, SECONDS, AND LEFTOVERS OF PRUNE PLUMS
USING THE CAFETERIA STYLE METHOD

Subjects	Number of times no food chosen	Number of First Servings Chosen Small Size	Number of First Servings Chosen Medium Size	Number of First Servings Chosen Large Size	Number of second serving chosen	Number of times food left on plates
1	3	3	1	1	0	1
2	0	4	3	2	1	3
3	0	0	4	5	13	0
4	0	0	5	3	5	1
5	1	5	2	1	1	0
6	7	0	1	0	0	1
7	1	1	2	4	7	0
8	0	0	2	6	6	0
9	4	5	0	0	0	5
10	3	0	1	1	0	0
11	0	4	4	1	0	4
12	1	5	2	1	1	3
Total	20	27	27	25	34	18
Average	1.7	2.3	2.3	2.1	2.8	1.5

TABLE 11
FIRST SERVINGS, SECONDS, AND LEFTOVERS OF APRICOTS
USING THE FAMILY STYLE METHOD

Subjects	Number of times no food chosen	<u>Number of First Servings Chosen</u>			Number of second serving chosen	Number of times food left on plates
		Small Size	Medium Size	Large Size		
1	2	0	3	3	1	2
2	0	1	4	2	2	0
3	0	0	1	6	6	0
4	2	1	0	4	1	1
5	0	4	4	0	2	4
6	6	1	0	0	0	1
7	0	0	3	3	4	0
8	0	0	3	1	1	0
9	2	1	2	1	1	3
10	1	1	3	0	1	1
11	1	4	1	1	0	0
12	2	0	0	2	0	0
Total	16	13	24	23	19	12
Average	1.3	1.1	2.0	1.9	1.6	1.0

TABLE 12

A COMPARISON OF CAFETERIA AND FAMILY STYLE METHODS OF SERVICE

	Cafeteria Style Prune Plums	Family Style Apricots
Times Given	9.0	8.0
Average Number of First Servings Chosen Per Child	0.8	0.6
Average Number of Seconds Chosen Per Child	0.3	0.2
Average of First Servings and Seconds Chosen Per Child	1.1	0.8
Small	0.3	0.1
Medium	0.3	0.3
Large	0.2	0.2
Percent of Rejections Over the Entire Serving Time	18.9	16.3
Number of Times Food Left Per Child	0.2	0.1
Number of Servings Consumed Per Child	0.9	0.7
Percentages of Times Food Taken was Consumed	84.1	84.8

A Comparison of Cafeteria and Family Style Serving Methods
as Related to Acceptance of Two Puddings

Results, including the number of first servings chosen, number of second servings and number of times each subject left rice pudding on his plate when rice pudding was served by the cafeteria style of service, can be found in Table 13. Comparable information on the serving of tapioca pudding by the family style method is recorded in Table 14. Table 15 shows the difference between the two methods which have been tabulated from the two previously mentioned tables.

From Table 15 one can see how insignificant was the difference in percentage of food consumed by the cafeteria and family style methods. The percentage of rice pudding consumption served by cafeteria style was 72.5 percent, and consumption of tapioca pudding served family style was 72.1 percent.

The number of seconds and the percentage of food left on child's plate were exactly the same with both serving methods.

Typical comments made by children on rice pudding were concerned with the raisins which were in the rice pudding.

Some children's comments about tapioca pudding were: "Oh boy, this looks like custard. What is it called? Look at it. It will make me strong - I don't like it". Another child said, "I'll just take a little bit, OK? I am mixing mine cause it's sticky. It is still sticky (repeated for three times). It's like a bubble gum".

TABLE 13

FIRST SERVINGS, SECONDS, AND LEFTOVERS OF RICE PUDDING

USING THE CAFETERIA STYLE METHOD

Subjects	Number of times no food chosen	Number of First Servings Chosen	Number of second serving chosen	Number of times food left on plates
	Small Size	Medium Size	Large Size	
1	6	1	1	0
2	0	4	2	0
3	0	4	3	1
4	0	0	3	5
5	0	2	4	2
6	5	0	0	0
7	0	2	2	0
8	1	3	0	2
9	0	1	0	7
10	4	1	1	0
11	0	0	0	8
12	5	1	0	0
Total	21	19	16	29
Average	2.8	1.6	1.3	2.4
				1.3
				1.8

TABLE 14

FIRST SERVINGS, SECONDS, AND LEFTOVERS OF TAPIOCA PUDDING
USING THE FAMILY STYLE METHOD

Subjects	Number of times no food chosen	Number of First Servings Chosen Small Size	Number of First Servings Chosen Medium Size	Number of First Servings Chosen Large Size	Number of second serving chosen	Number of times food left on plates
1	7	0	0	1	0	1
2	4	0	1	2	0	3
3	0	2	5	0	5	4
4	1	0	2	3	4	2
5	4	1	2	0	1	2
6	6	0	0	0	0	0
7	6	2	0	0	0	0
8	1	2	1	0	0	1
9	0	0	1	4	5	1
10	2	2	0	1	1	1
11	2	0	2	2	0	1
12	1	0	1	6	2	1
Total	34	9	15	19	18	17
Average	2.8	0.8	1.3	1.6	1.5	1.4

TABLE 15

A COMPARISON OF CAFETERIA AND FAMILY STYLE METHODS OF SERVICE

	Cafeteria Style Rice Pudding	Family Style Tapioca Pudding
Times Given	8.0	9.0
Average Number of First Servings Chosen Per Child	0.7	0.4
Average Number of Seconds Chosen Per Child	0.2	0.2
Average of First Servings and Seconds Chosen Per Child	0.9	0.6
Small	0.2	0.1
Medium	0.2	0.1
Large	0.3	0.2
Percent of Rejections Over the Entire Serving Time	22.5	31.1
Number of Times Food Left Per Child	0.2	0.2
Number of Servings Consumed Per Child	0.6	0.4
Percentages of Times Food Taken was Consumed	72.5	72.1

CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary

The purpose of this study was to compare the influence of cafeteria and family style methods of service upon the acceptance of ten particular foods at the noon meal by pre-school children. Each method of service was used for eight and one-half weeks, and five foods were served by each style.

The sample selected included 12 children between the ages of two years, four months and four years, seven months. The subjects were enrolled at the University Nursery School of the Virginia Polytechnic Institute, Blacksburg, Virginia, during the 1964-65 academic year.

Menus used with both the cafeteria and family style methods of service included (1) meat or meat substitute; (2) two vegetables or a vegetable and a fruit; (3) sandwich made with whole wheat bread; (4) milk; and (5) a milk, fruit, or other suitable dessert. The menus were the same for each experimental period with the exception of the ten experimental foods used. Daily records were kept by student teachers and the investigator on the sizes of servings and second servings of the ten experimental foods, five each quarter. Records were also kept of the child's comments and teacher's observations of each child in relation to the experimental foods.

Tabulation and summarization of the data showed:

1. The children accepted more of the experimental foods by the cafeteria style.
2. The subjects chose more second servings with the cafeteria method of service.
3. There was no difference between the two services as indicated by the number of times food was left on the plates at the end of the meals.
4. Finally, the amount of food consumed per child each day was higher with the cafeteria style than with the family style method of service.

Conclusions

This study showed that the five experimental foods served by the cafeteria style method of service were more readily accepted by the subjects than those served by the family style. The subjects chose more seconds of food, and the amount of food consumed per child per day was greater with the cafeteria style.

Recommendations

The following recommendations are made

1. A follow-up study involving the same subjects and ten experimental foods, but using a variation of the pattern of serving would be useful. A possible plan would include serving all ten particular foods for two quarters, five on alternating weeks, using the cafeteria style serving method

one quarter and the family style serving method the following quarter. Results from the follow-up study may be compared with those of this investigation.

2. Persons who are responsible for the feeding of young children in other situations should examine their methods of service for possible effects upon the children's acceptance of food.
3. Families may wish to consider the possibility of allowing their children some freedom in selecting sizes of servings of foods which are prepared for the meal.

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APPENDIX

LABORATORY NURSERY SCHOOL
Department of Management, Housing and Family Development
College of Home Economics
Virginia Polytechnic Institute, Fall Quarter, 1964

Monday, September 21

Meat Loaf
Garden Peas
Carrot Strips
Milk
Butter and Parsley Sandwich
Cocoa Pudding

Tuesday, September 22

Lamb Patty
Green Beans
Apple Sauce
Milk
Toast
Banana ($\frac{1}{2}$ unpeeled)

Wednesday, September 23

Cheese Souffle
Brussel Sprouts
Celery Strips
Milk
Peanut Butter (with o.j.) Sandwich
Soft Custard

Thursday, September 24

Swiss Steak
Baby Green Lima Beans
Carrot Strips
Milk
Toast
Rice Pudding

Friday, September 25

Salmon Loaf
Stewed Tomatoes
Carrot Strips
Milk
Bread and Butter Sandwich
Prune Plums

Monday, September 28

Stuffed Egg
Scalloped Potato
Brussel Sprouts
Milk
Toast
Gingerbread with Lemon-sauce

Tuesday, September 29

Swiss Steak
Garden Peas
Carrot Strips
Milk
Bread and Butter Sandwich
Prune Plums

Wednesday, September 30

Lamb Patty
Baby Green Lima Beans
Apple Wedge
Milk
Toast
Diced Peaches

Thursday, October 1

Broiled Bacon
Green Beans
Celery Strips
Milk
Bread and Butter Sandwich
Rice Pudding

Friday, October 2

Macaroni and Cheese
Diced Carrots (cooked)
Cabbage Slaw
Milk
Butter and Parsley Sandwich
Cocoa Pudding

Monday, October 5

Swiss Steak
Garden Peas
Baked Potato
Milk
Peanut Butter (with o.j.) Sandwich
Prune Plums

Tuesday, October 6

Cheese Souffle
Green Beans
Apple Wedge
Milk
Parsley and Butter Sandwich
Soft Custard

Wednesday, October 7

Meat Loaf
Diced Carrots (cooked)
Apple Sauce
Milk
Bread and Butter Sandwich
Rice Pudding

Thursday, October 8

Lamb Patty
Baby Green Lima Beans
Carrot Strips
Milk
Bread and Butter Sandwich
Diced Peaches

Friday, October 9

Stuffed Egg
Scalloped Potato
Brussel Sprouts
Milk
Toast
Banana ($\frac{1}{2}$ unpeeled)

Monday, October 12

Lamb Patty
Carrot Strips
Garden Peas
Milk
Toast
Soft Custard

Tuesday, October 13

Broiled Bacon
Brussel Sprouts
Scalloped Potato
Milk
Bread and Butter Sandwich
Apple Sauce

Wednesday, October 14

Meat Loaf
Mashed Potatoes
Green Beans
Milk
Peanut Butter (with o.j.) Sandwich
Prune Plums

Thursday, October 15

Swiss Steak
Carrot Strips
Baby Green Lima Beans
Milk
Butter and Parsley Sandwich
Cocoa Pudding

Friday, October 16

Cheese Souffle
Stewed Tomatoes
Celery Strips
Milk
Toast
Rice Pudding

Monday, October 19

Meat Loaf
Baked Potato
Baby Green Lima Beans
Milk
Peanut Butter (with o.j.) Sandwich
Prune Plums

Tuesday, October 20

Lamb Patty
Scalloped Potatoes
Apple Wedge
Milk
Toast
Soft Custard

Wednesday, October 21

Swiss Steak
Green Beans
Celery Strips
Milk
Toast
Rice Pudding

Thursday, October 22

Broiled Bacon
Mashed Potatoes
Brussel Sprouts
Milk
Bread and Butter Sandwich
Diced Peaches

Friday, October 23

Salmon Loaf
Garden Peas
Carrot Strips
Milk
Butter and Parsley Sandwich
Cocoa Pudding

Monday, October 26

Macaroni and Cheese
Stewed Tomatoes
Celery Strips
Milk
Toast
Rice Pudding

Tuesday, October 27

Swiss Steak
Garden Peas
Apple Sauce
Milk
Butter and Parsley Sandwich
Cocoa Pudding

Wednesday, October 28

Meat Loaf
Green Beans
Carrot Strips
Milk
Peanut Butter (with o.j.) Sandwich
Prune Plums

Thursday, October 29

Lamb Patty
Baked Potato
Baby Green Lima Beans
Milk
Bread and Butter Sandwich
Diced Peaches

Friday, October 30

Cheese Souffle
Apple Sauce
Brussel Sprouts
Milk
Toast
Gingerbread with Lemon-sauce

Monday, November 2

Meat Loaf
 Garden Peas
 Carrot Strips
 Milk
 Butter and Parsley Sandwich
 Cocoa Pudding

Tuesday, November 3

Lamb Patty
 Green Beans
 Apple Sauce
 Milk
 Toast
 Banana ($\frac{1}{2}$ unpeeled)

Wednesday, November 4

Cheese Souffle
 Brussel Sprouts
 Celery Strips
 Milk
 Peanut Butter (with o.j.) Sandwich
 Soft Custard

Thursday, November 5

Swiss Steak
 Baby Green Lima Beans
 Carrot Strips
 Milk
 Toast
 Rice Pudding

Friday, November 6

Salmon Loaf
 Stewed Tomatoes
 Carrot Strips
 Milk
 Bread and Butter Sandwich
 Prune Plums

Monday, November 9

Stuffed Egg
 Scalloped Potato
 Brussel Sprouts
 Milk
 Toast
 Gingerbread with Lemon-sauce

Tuesday, November 10

Swiss Steak
 Garden Peas
 Carrot Strips
 Milk
 Bread and Butter Sandwich
 Prune Plums

Wednesday, November 11

Lamb Patty
 Baby Green Lima Beans
 Apple Wedge
 Milk
 Toast
 Diced Peaches

Thursday, November 12

Broiled Bacon
 Green Beans
 Celery Strips
 Milk
 Bread and Butter Sandwich
 Rice Pudding

Friday, November 13

Macaroni with Cheese
 Diced Carrots (cooked)
 Cabbage Slaw
 Milk
 Butter and Parsley Sandwich
 Cocoa Pudding

Monday, November 16

Swiss Steak
Garden Peas
Baked Potato
Milk
Peanut Butter (with o.j.) Sandwich
Prune Plums

Tuesday, November 17

Cheese Souffle
Green Beans
Apple Wedge
Milk
Parsley and Butter Sandwich
Soft Custard

Wednesday, November 18

Meat Loaf
Diced Carrots (cooked)
Apple Sauce
Milk
Bread and Butter Sandwich
Rice Pudding

Thursday, November 19

Lamb Patty
Baby Green Lima Beans
Carrot Strips
Milk
Bread and Butter Sandwich
Diced Peaches

Friday, November 20

Stuffed Egg
Scalloped Potato
Brussel Sprouts
Milk
Toast
Banana ($\frac{1}{2}$ unpeeled)

Monday, November 23

Lamb Patty
Carrot Strips
Garden Peas
Milk
Toast
Soft Custard

Tuesday, November 24

Broiled Bacon
Brussel Sprouts
Scalloped Potato
Milk
Bread and Butter Sandwich
Apple Sauce

Wednesday, November 25

Meat Loaf
Mashed Potatoes
Green Beans
Milk
Peanut Butter (with o.j.) Sandwich
Prune Plums

Monday, November 30

Meat Loaf
Baked Potato
Baby Green Lima Beans
Milk
Peanut Butter (with o.j.) Sandwich
Prune Plums

Tuesday, December 1

Lamb Patty
Scalloped Potato
Apple Wedge
Milk
Toast
Soft Custard

Wednesday, December 2

Swiss Steak
Green Beans
Celery Strips
Milk
Toast
Rice Pudding

Thursday, December 3

Broiled Bacon
Mashed Potatoes
Brussel Sprouts
Milk
Bread and Butter Sandwich
Diced Peaches

Friday, December 4

Salmon Loaf
Garden Peas
Carrot Strips
Milk
Butter and Parsley Sandwich
Cocoa Pudding

LABORATORY NURSERY SCHOOL
 Department of Management, Housing and Family Development
 College of Home Economics
 Virginia Polytechnic Institute, Winter Quarter, 1965

Wednesday, January 6

Cheese Souffle
 Broccoli
 Celery Strips
 Milk
 Peanut Butter (with o.j.) Sandwich
 Soft Custard

Thursday, January 7

Swiss Steak
 Baby Green Lima Beans
 Carrot Strips
 Milk
 Toast
 Tapioca Pudding

Friday, January 8

Salmon Loaf
 Stewed Tomatoes
 Carrot Strips
 Milk
 Bread and Butter Sandwich
 Apricots

Monday, January 11

Stuffed Egg
 Scalloped Potato
 Broccoli
 Milk
 Toast
 Gingerbread with Lemon-sauce

Tuesday, January 12

Swiss Steak
 Garden Peas
 Carrot Strips
 Milk
 Bread and Butter Sandwich
 Apricots

Wednesday, January 13

Liver Patty
 Baby Green Lima Beans
 Apple Wedge
 Milk
 Toast
 Diced Peaches

Thursday, January 14

Broiled Bacon
 Green Beans
 Celery Strips
 Milk
 Bread and Butter Sandwich
 Tapioca Pudding

Friday, January 15

Macaroni and Cheese
 Diced Carrots (cooked)
 Cabbage Slaw
 Milk
 Cream Cheese Sandwich
 Cocoa Pudding

Monday, January 18

Swiss Steak
 Garden Peas
 Baked Potato
 Milk
 Peanut Butter (with o.j.) Sandwich
 Apricots

Tuesday, January 19

Cheese Souffle
 Green Beans
 Apple Wedge
 Milk
 Cream Cheese Sandwich
 Soft Custard

Wednesday, January 20

Meat Loaf
 Diced Carrots (cooked)
 Apple Sauce
 Milk
 Bread and Butter Sandwich
 Tapioca Pudding

Thursday, January 21

Liver Patty
 Baby Green Lima Beans
 Carrot Strips
 Milk
 Bread and Butter Sandwich
 Diced Peaches

Friday, January 22

Stuffed Egg
 Scalloped Potato
 Broccoli
 Milk
 Toast
 Banana ($\frac{1}{2}$ unpeeled)

Monday, January 25

Liver Patty
 Carrot Strips
 Garden Peas
 Milk
 Toast
 Soft Custard

Tuesday, January 26

Broiled Bacon
 Broccoli
 Scalloped Potato
 Milk
 Bread and Butter Sandwich
 Apple Sauce

Wednesday, January 27

Meat Loaf
 Mashed Potatoes
 Green Beans
 Milk
 Peanut Butter (with o.j.) Sandwich
 Apricots

Thursday, January 28

Swiss Steak
 Carrot Strips
 Baby Green Lima Beans
 Milk
 Cream Cheese Sandwich
 Cocoa Pudding

Friday, January 29

Cheese Souffle
 Stewed Tomatoes
 Celery Strips
 Milk
 Toast
 Tapioca Pudding

Monday, February 1

Meat Loaf
 Baked Potato
 Baby Green Lima Beans
 Milk
 Peanut Butter (with o.j.) Sandwich
 Apricots

Tuesday, February 2

Liver Patty
 Scalloped Potato
 Apple Wedge
 Milk
 Toast
 Soft Custard

Wednesday, February 3

Swiss Steak
 Green Beans
 Celery Strips
 Milk
 Toast
 Tapioca Pudding

Thursday, February 4

Broiled Bacon
 Mashed Potatoes
 Broccoli
 Milk
 Bread and Butter Sandwich
 Diced Peaches

Friday, February 5

Salmon Loaf
 Garden Peas
 Carrot Strips
 Milk
 Cream Cheese Sandwich
 Cocoa Pudding

Monday, February 8

Macaroni and Cheese
 Stewed Tomatoes
 Celery Strips
 Milk
 Toast
 Tapioca Pudding

Tuesday, February 9

Swiss Steak
 Garden Peas
 Apple Sauce
 Milk
 Cream Cheese Sandwich
 Cocoa Pudding

Wednesday, February 10

Meat Loaf
 Green Beans
 Carrot Strips
 Milk
 Peanut Butter (with o.j.) Sandwich
 Apricots

Thursday, February 11

Liver Patty
 Baked Potato
 Baby Green Lima Beans
 Milk
 Bread and Butter Sandwich
 Diced Peaches

Friday, February 12

Cheese Souffle
 Apple Sauce
 Broccoli
 Milk
 Toast
 Gingerbread with Lemon-sauce

Monday, February 15

Meat Loaf
 Garden Peas
 Carrot Strips
 Milk
 Cream Cheese Sandwich
 Cocoa Pudding

Tuesday, February 16

Liver Patty
 Green Beans
 Apple Sauce
 Milk
 Toast
 Banana ($\frac{1}{2}$ unpeeled)

Wednesday, February 17

Cheese Souffle
 Broccoli
 Celery Strips
 Milk
 Peanut Butter (with o.j.) Sandwich
 Soft Custard

Thursday, February 18

Swiss Steak
 Baby Green Lima Beans
 Carrot Strips
 Milk
 Toast
 Tapioca Pudding

Friday, February 19

Salmon Loaf
 Stewed Tomatoes
 Carrot Strips
 Milk
 Bread and Butter Sandwich
 Apricots

Monday, February 22

Stuffed Egg
 Scalloped Potato
 Broccoli
 Milk
 Toast
 Gingerbread with Lemon-sauce

Tuesday, February 23

Swiss Steak
 Garden Peas
 Carrot Strips
 Milk
 Bread and Butter Sandwich
 Apricots

Wednesday, February 24

Liver Patty
 Baby Green Lima Beans
 Apple Wedge
 Milk
 Toast
 Diced Peaches

Thursday, February 25

Broiled Bacon
 Green Beans
 Celery Strips
 Milk
 Bread and Butter Sandwich
 Tapioca Pudding

Friday, February 26

Macaroni with Cheese
 Diced Carrots (cooked)
 Cabbage Slaw
 Milk
 Cream Cheese Sandwich
 Cocoa Pudding

Monday, March 1

Swiss Steak
 Garden Peas
 Baked Potato
 Milk
 Peanut Butter (with o.j.) Sandwich
 Apricots

Tuesday, March 2

Cheese Souffle
 Green Beans
 Apple Wedge
 Milk
 Cream Cheese Sandwich
 Soft Custard

Wednesday, March 3

Meat Loaf
Diced Carrots (cooked)
Apple Sauce
Milk
Bread and Butter Sandwich
Tapioca Pudding

Thursday, March 4

Liver Patty
Baby Green Lima Beans
Carrot Strips
Milk
Bread and Butter Sandwich
Diced Peaches

Friday, March 5

Stuffed Egg
Scalloped Potato
Broccoli
Milk
Toast
Banana ($\frac{1}{2}$ unpeeled)

Monday, March 8

Liver Patty
Carrot Strips
Garden Peas
Milk
Toast
Soft Custard

Tuesday, March 9

Broiled Bacon
Broccoli
Scalloped Potato
Milk
Bread and Butter Sandwich
Apple Sauce

Wednesday, March 10

Meat Loaf
Mashed Potatoes
Green Beans
Milk
Peanut Butter (with o.j.) Sandwich
Apricots

Thursday, March 11

Meat Loaf
Baked Potato
Baby Green Lima Beans
Milk
Peanut Butter (with o.j.) Sandwich
Tapioca Pudding

Friday, March 12

Macaroni with Cheese
Scalloped Potatoes
Apple Wedge
Milk
Cream Cheese Sandwich
Soft Custard

Monday, March 15

Swiss Steak
Green Beans
Celery Strips
Milk
Toast
Tapioca Pudding

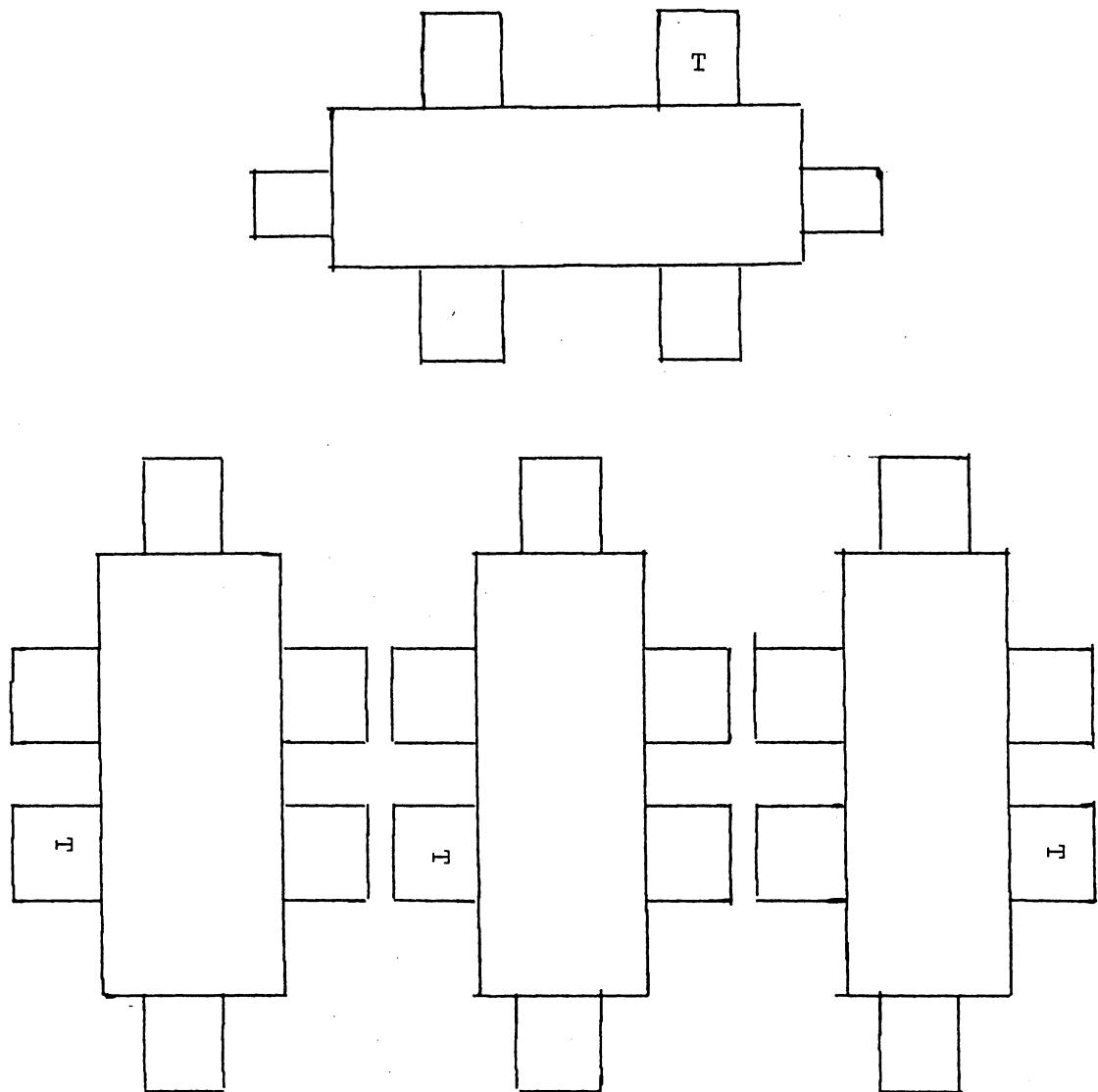
Tuesday, March 16

Broiled Bacon
Mashed Potatoes
Broccoli
Milk
Bread and Butter Sandwich
Diced Peaches

Wednesday, March 17

Salmon Loaf
Garden Peas
Carrot Strips
Milk
Cream Cheese Sandwich
Cocoa Pudding

EATING DIAGRAM
VIRGINIA POLYTECHNIC INSTITUTE
NURSERY SCHOOL



EATING RECORD

VIRGINIA POLYTECHNIC INSTITUTE

NURSERY SCHOOL

Name of Child _____

Size of Serving

ABSTRACT

The purpose of this investigation was to study and compare the influences of cafeteria and family style methods of service upon the acceptance of ten foods at the noon meal by pre-school children as measured by the consumption of those foods. Each experimental period lasted for eight and one-half weeks.

Subjects were 12 children, six girls and six boys, who were enrolled in the University Nursery School at the Virginia Polytechnic Institute, Blacksburg, Virginia during the 1964-65 academic year.

With the exception of ten foods, five each experimental period, menus used with both methods of service were the same. Daily records were kept of the sizes of servings and number of second servings of the specific foods chosen by each child. Records of the child's comments and of the teacher's observations of each child in relation to those foods were also kept.

Results of the data collected revealed that the subjects in general took and consumed more food with the cafeteria style than they did with the family style method of service. The number of second servings was greater with foods served by cafeteria style.