

Eating at School

A Summary of NFSMI Research on Time Required by Students to Eat Lunch

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**National Food Service Management Institute
The University of Mississippi**

Building the Future Through Child Nutrition

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The National Food Service Management Institute (NFSMI) was established by Congress in 1989 at The University of Mississippi in Oxford as the resource center for Child Nutrition Programs. The Institute operates under a grant agreement with the United States Department of Agriculture, Food and Nutrition Service. The NFSMI Applied Research Division is located at The University of Southern Mississippi in Hattiesburg.

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Introduction

The Applied Research Division (ARD) of the National Food Service Management Institute (NFSMI) sponsored three studies to identify the amount of time elementary, middle, and high school students took to eat lunch. The most important aspect of each study was to measure consumption time for a school lunch. Many child nutrition professionals had asked the question, “How long does it take students to actually eat their meals?” If this time were known, school districts could factor in specific situations associated with student travel, service, and clean-up time to determine a lunch period that meets the needs of their student population. There were no objective data on this subject; therefore, the ARD sought this information for school nutrition programs.

How Were the Studies Conducted?

The NFSMI Applied Research Division contracted with scientists at Texas Tech University to conduct the first of three studies, which was completed in fall 1997. Central Washington University and Spectrum Consulting contracted with ARD to conduct two additional studies using the same techniques. These studies were completed in spring 1999. Dr. Alfonso Sanchez, co-investigator on the Texas Tech research, served as technical advisor to ensure techniques were similar in all three studies.

There were a total of 18 schools included in the “Eating at School” time studies: six elementary schools, six middle schools, and six high schools. Schools were located in five school districts in four states: one district each in New York, Texas, and Washington and two districts in the state of Utah.

Data were collected by means of a time study based on multiple visits to schools in all three divisions: elementary, middle, and high school. Trained research assistants used observation boards with attached stopwatches to record time on forms specifically designed for data collection. They recorded data over a 12- to 18-week period. Research assistants observed students at the beginning, middle, and end of the lunch periods. Students were timed while in the serving lines including the cashier’s stations, traveling to

the eating area, at the lunch tables, and while carrying or bussing their soiled trays to an area for clean-up. Time at the lunch table was divided into eating and socializing elements. Overall, the results of these studies represented 17,400 observations and timing of student behavior.

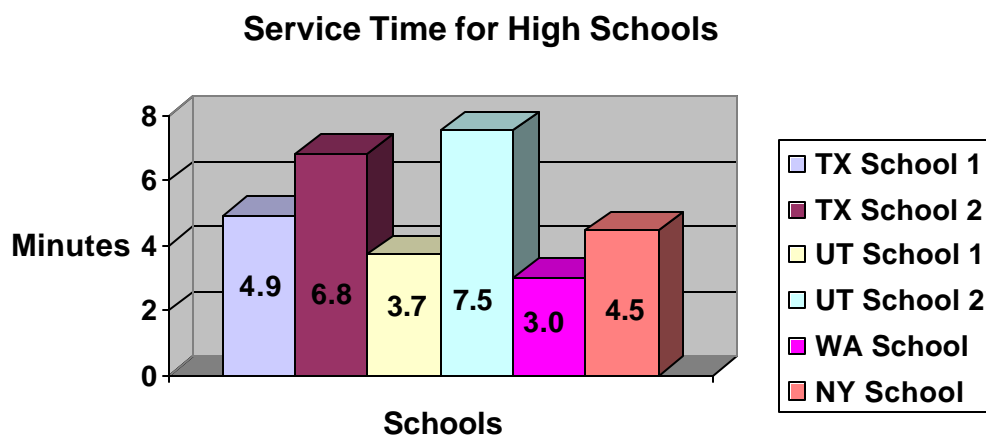
How Long Did It Take Students to Eat Lunch in School?

The “Eating at School” time studies encompassed three components: service time, time at table, and bussing time. Travel or play times, associated with the meal period but occurring outside the cafeteria, were not included in any of the calculations.

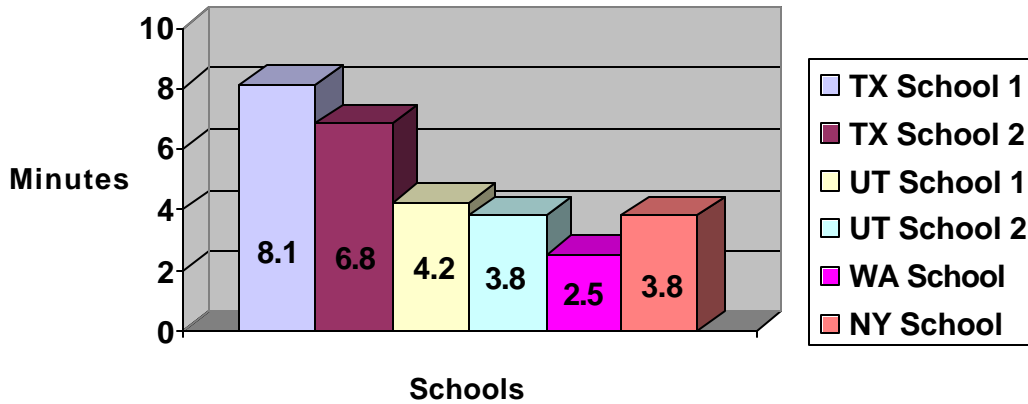
Service Time

Service time is the time it took students to choose and pick up their food and find a place at a table to eat. This time was composed of three smaller elements: time standing in the service line to receive a lunch tray, time standing in the cashier’s line after a tray was received, and time to travel to the lunch table.

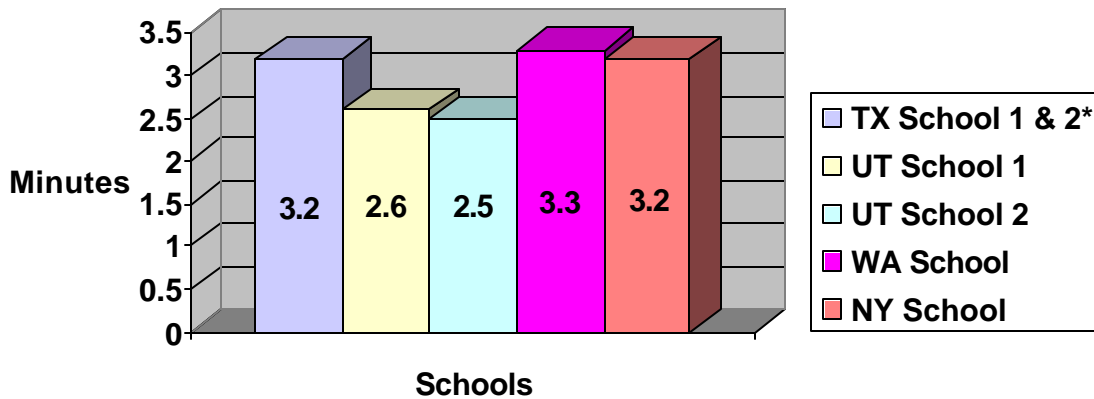
There was a wide range of service time among the high schools and the middle schools studied. High school service time ranged from 3.0 to 7.5 minutes with the middle school time ranging from 2.5 to 8.1 minutes. Many variables can affect the time for service including number of students released per lunch period, number and type of serving lines, and whether students or others are allowed to cut in line. The following bar charts illustrate the service time for each school division beginning with the high school division.



Service Time for Middle Schools



Service Time for Elementary Schools



* Data averaged in original study

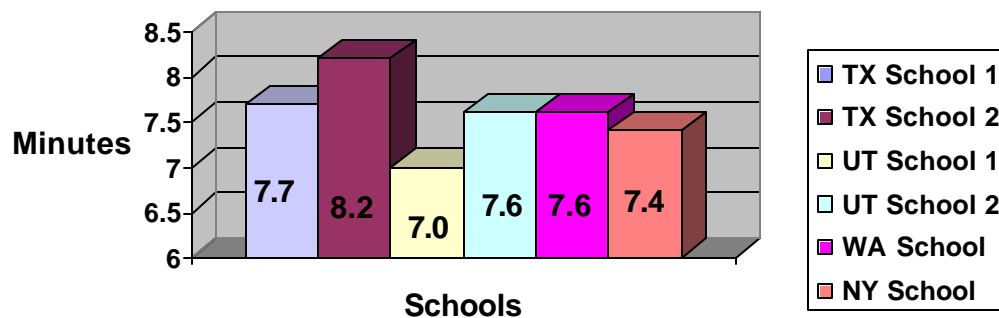
Elementary school students spent the least amount of time for service with a range of 2.5 to 3.3 minutes from the time they entered the cafeteria service line to the time they reached the lunch table. The majority of elementary schools used a staggered release schedule where a limited number of students were sent to the cafeteria at set time intervals.

Time at Table

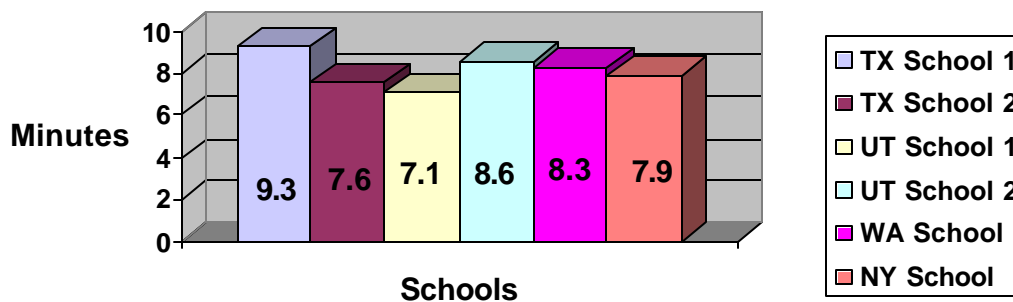
The second component, time at table, was the time available in the lunch period for eating in the school dining area. Time at table was divided into two smaller elements: eating and non-eating or socializing. Students either ate or socialized while at the lunch tables. Eating time was defined as the chewing of food and the drinking of beverages. If students started to talk with friends halfway through a sandwich, the stopwatch was halted and resumed only when they went back to eating or drinking.

More time was spent eating than socializing, except in Texas where the lunch period was longer. Eating time for students in all grades ranged from 7.3 minutes in New York to 9.5 minutes in Texas. These findings were consistent across school divisions in all participating districts. The following bar charts illustrate the average eating time for students in each school by division.

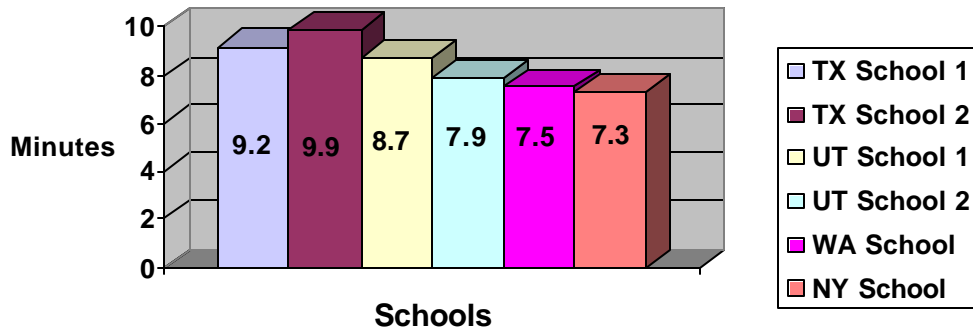
Eating Time for High Schools



Eating Time for Middle Schools



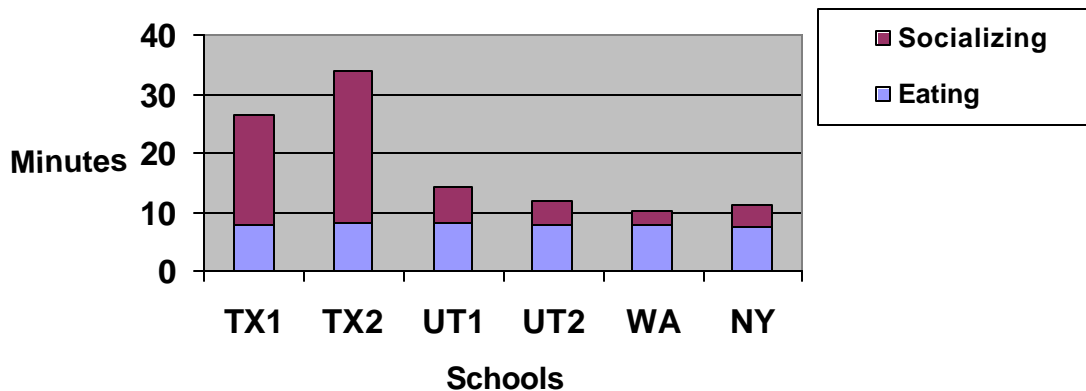
Eating Time for Elementary Schools



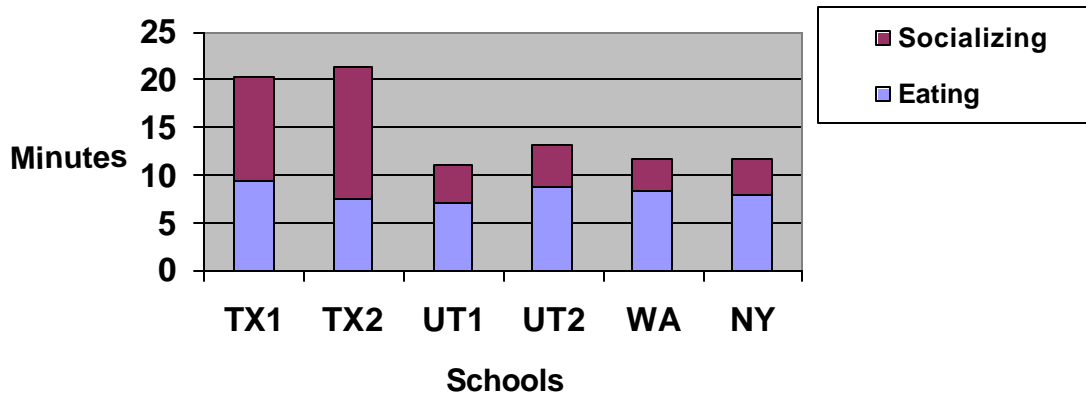
Time spent at the table socializing with other students ranged from 2.5 minutes in Washington to 21.4 minutes in Texas. Socializing time at the lunch table was consistent among the districts with the exception of Texas. This district had a longer lunchtime and required the students to stay in the dining area. In another state, students at the school were fed in the classroom and held in their seats until released by the teacher.

The total time at table for all grades ranged from 10.2 to 34.0 minutes. The lowest time was recorded in a high school in Washington and the highest time was observed in a high school in Texas. The eating time for all students was very consistent. Socializing time appeared to change in direct relation to the amount of time allotted for the lunch period. This did not hold true for the time spent in eating. Segmented bar charts for each school division follow.

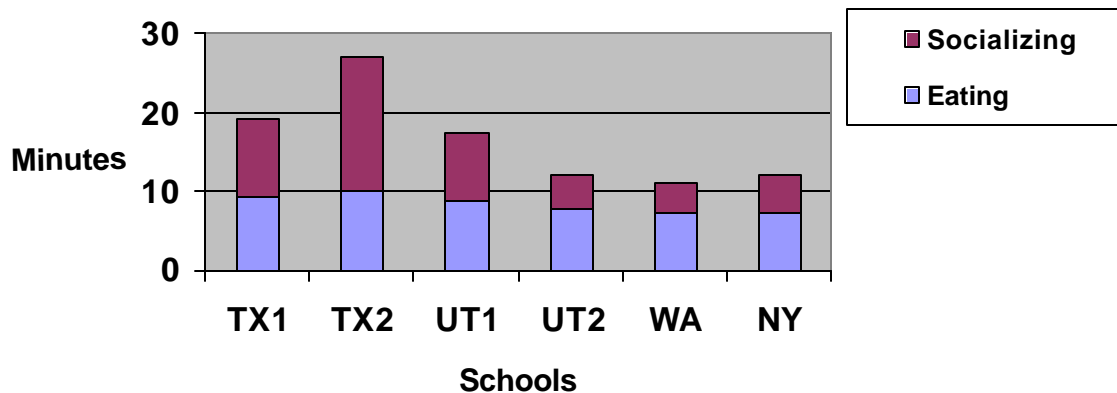
Time at Table for High Schools



Time at Table for Middle Schools



Time at Table for Elementary Schools



Bussing of Lunch Trays

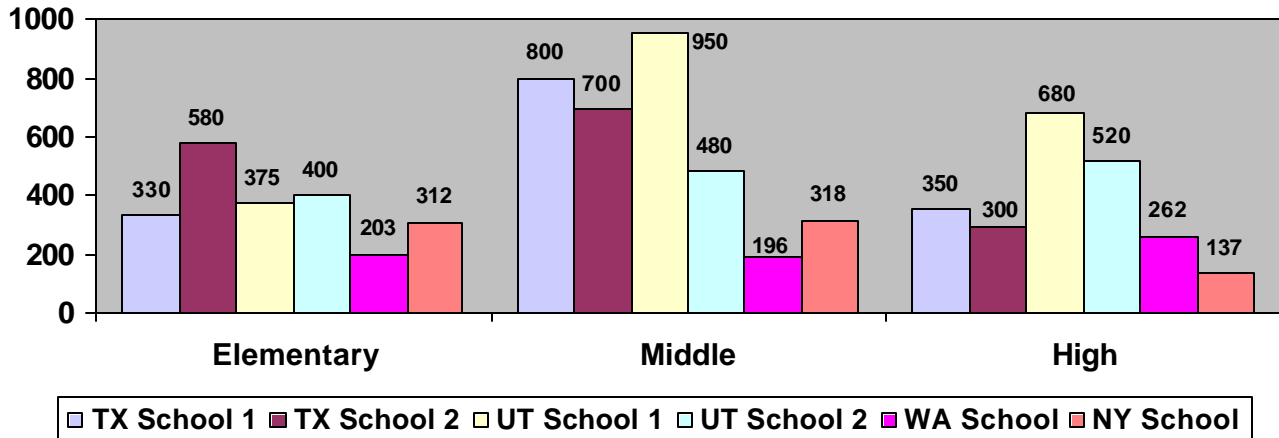
The third component in the "Eating at School" time studies was the bussing of lunch trays. In all schools, the time students took to carry their soiled trays to an area for clean-up was less than one minute. High school students' time in this category ranged from 11 to 45 seconds. Middle school students required 17 to 35 seconds to bus their trays. As might be expected, elementary school students took the longest time, ranging from 27 to 52 seconds to bus trays.

What Type of School Nutrition Programs Participated in the Studies?

The eighteen schools selected for the study included both rural and urban settings. The number of students eating lunch varied considerably, ranging from a small school serving 137 students to a large school serving 950 students (see chart below).

All schools participated in the National School Lunch Program. Schools were diverse in the percentage of lunch participants receiving free and reduced-price meals. One school reported a low of 26% and another school reported a high of 93% of student participants receiving free and reduced-price meals.

Number of Students Served Lunch



Scheduled Lunch Periods

All elementary schools and middle schools enforced a closed campus policy, and students were not allowed to leave the school grounds during the lunch period. All high schools adopted an open campus policy, allowing students to leave campus during the lunch period. Lunch periods varied in length and student release schedules. Lunch schedules for five of the six elementary schools were staggered, ranging from 15-minute lunch periods to 30-minute lunch periods. For example, one elementary school in Texas offered five 15-minute staggered lunch periods over an hour and 15 minutes with three classes attending each lunch period. One exception was an elementary school in New York that combined lunch and recess for a total of 45 minutes. All elementary schools scheduled recess after lunch with the exception of one elementary school in Utah that scheduled recess prior to lunchtime. Lunch schedules for the middle and high schools ranged in length from 22 minutes to 44 minutes. Only one middle school in Utah reported a staggered release schedule for students.

Serving Lines

The number of serving lines varied in the schools. All elementary schools provided one traditional straight serving line for meal service during lunch. All middle and high schools reported having one line for the reimbursable school lunch meal and an additional one to four lines such as a self-service line or a serving line for a la carte items. In some schools, the additional lines offered food items that qualified as a reimbursable meal. The one exception to the traditional straight serving line was Texas, which used a U-shaped serving line.

Cashier's Stations

Elementary schools in Texas, Utah, and Washington all had an automated meal count system such as debit cards or number entry to record sales. An exception was one school in Utah. Because of the high number of students that were eligible for free and reduced-price meals, all students in this school were provided meals at no charge, which eliminated the need for a cashier. The elementary schools in New York reported students paying at the cashier's station.

Middle schools and high schools in Utah and Texas all used an automated system for recording meal counts and sales. In the Washington and New York middle schools, an employee who worked on the serving line also acted as cashier. New York and Washington high schools reported that cashiers collected lunch payments. Some middle schools and high schools had several cashier's stations.

Bussing Trays from Dining Areas

All schools reported that students ate in an area adjacent to where they received meals, with the exception of one elementary school in New York that required students to return to the classroom to eat lunch. The procedure to bus trays was similar in all elementary schools with students instructed to form a line to bus trays. All middle schools allowed students to bus their trays when they were through eating and on their way out of the dining area, with the exception of one middle school in New York that mandated students to stay in the dining area the entire 22-minute lunch period. All high schools also allowed students to bus their trays when they were through eating and ready to leave the dining area.

What Can I Conclude from These Studies?

The following conclusions may be drawn from the “Eating at School” time studies:

- ❖ Total time to eat at school (service, time at table, and bussing) ranged from 13-35 minutes.
- ❖ Service time varied the most for all schools studied.
- ❖ Time students spent at the dining table ranged from 74-81% of total lunch time.
- ❖ Eating time was very consistent among students of all ages. Students required approximately 10 minutes, on average, to eat their lunch.
- ❖ Eating time did not seem to be affected by age of student, size of district, menu, length of meal period, serving styles, holding students at the table, or scheduling recess prior to the meal period.
- ❖ Time spent socializing seemed to vary directly with the length of the meal period.

Finally, a school foodservice director should feel comfortable in stating that students (K-12) need approximately 10 minutes just to consume their lunch. These minutes only encompass the physical act of eating and drinking and do not include talking, laughing, and other types of appropriate social behavior with friends at the table. Socializing is an important aspect of dining because allowing students sufficient time to relate to others provides a break in routine and refreshes them for afternoon classes. To figure a lunch period of sufficient length, additional minutes for socializing at the table must be added plus time for students to travel to and from the cafeteria, choose food from the serving line, and return their trays for clean-up.

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