

# Lunch Time at School Project



UW School of Public Health  
Nutritional Sciences Program 2015 Public Health Nutrition Course

# Outline

Background

Purpose

Methods

Results

Findings

Recommendations

Limitations

Conclusions



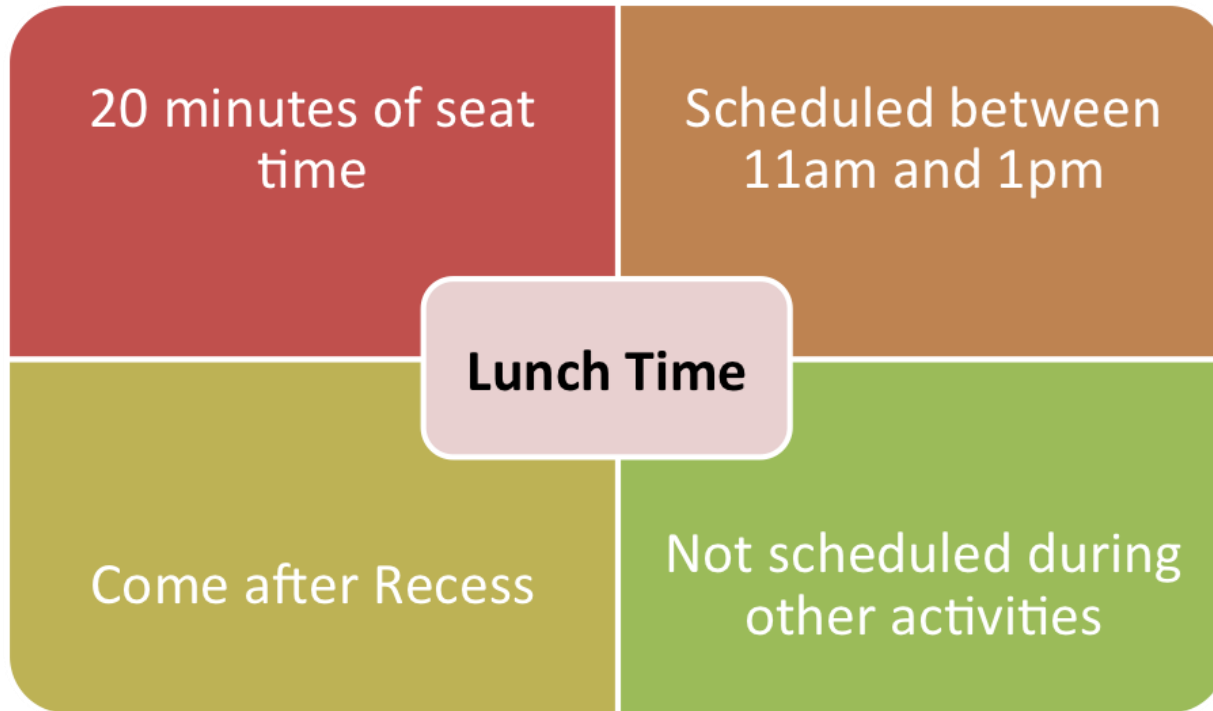
# BACKGROUND

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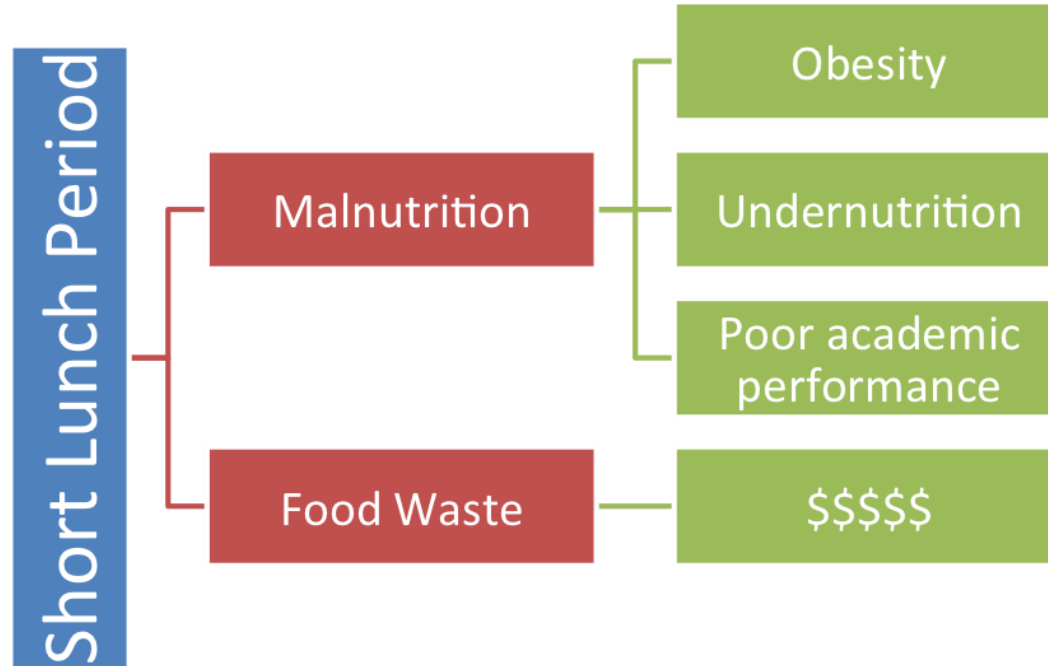
# Food Intake at Schools



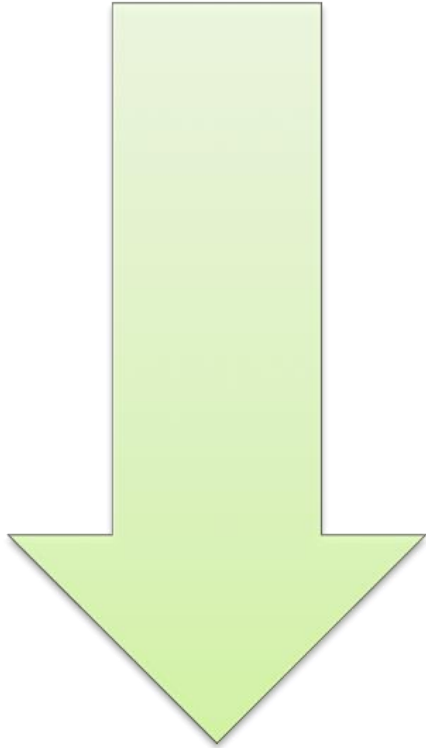
# Current Recommendations



# Consequences of a Short Lunch Time



# Drivers Impacting Seat Time



- Short Lunch Period
- Efficacy of food service
- Recess after lunch
- Early lunch

# PURPOSE

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# Lunch Time at School Project

## Why

- Provide information to inform recommendations to Seattle Public Schools administration, nutrition services, and other stakeholders

## What

- To decipher current elementary school lunch timing patterns for evaluation'

## Who

- Seattle Public School districts may not have enough time to eat their lunch

## How

- Evaluate current factors that influence school lunch time

# METHODS

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# Cafeteria Assessments

## Purpose:

Assess current lunchroom conditions

## Two Exploratory Evaluations:

1. Seat time
2. Plate waste



# Seat Time

## Observed:

- 7 Schools
- 3 Lunch periods per school
- Approx. 5 observers per school
- Sample size = 210 students

### Elementary School Cafeteria Observation Form

School \_\_\_\_\_ Observer Name: \_\_\_\_\_  
 Date: \_\_\_\_\_ Lunch Period: #1 #2 #3  
 Specified Lunch Period: From \_\_\_\_\_ To \_\_\_\_\_

Student #1		Student #2	
	Time ↓ 00:00 hr/min		Time ↓ 00:00 hr/min
A	Lunch start time (bell rings)	A	Lunch start time (bell rings)
B	Enters lunch line	B	Enters lunch line
C	Arrives at Cash Register	C	Arrives at Cash Register
D	Leaves Cash Register With Lunch	D	Leaves Cash Register With Lunch
E	Sits Down to Eat	E	Sits Down to Eat
F	Announcement made to begin cleaning up table	F	Announcement made to begin cleaning up table
G	Leaves Table	G	Leaves Table
H	Bell rings-end of lunch	H	Bell rings-end of lunch

#### Summary Data

	Student #1	Student #2
Time between start of lunch and entering lunch line: (B-A)	min	min
Total time in lunch line (D-B)	min	min
Time at cashier (D-C)	min	min
Seated Time (G-E)	min	min
Time between sitting down and announcement made to clean up (F-E)	min	min
Time between sitting down to eat and bell ring/end of lunch (H-E)	min	min
Approximate amount of main entree consumed	¼ ½ ¾ all	¼ ½ ¾ all
Approximate amount of fruit and/or vegetables consumed	¼ ½ ¾ all	¼ ½ ¾ all
Appeared rushed to finish lunch yes/no (circle one)	yes/no	yes/no

Total # of lunch lines \_\_\_\_\_ Total # of cashiers \_\_\_\_\_  
 Total # of food servers \_\_\_\_\_ Total # of adults supervising lunchroom \_\_\_\_\_

Other observations: (delays in lunch due to announcements, disciplinary actions, other?) \_\_\_\_\_

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Figure 1: School Cafeteria Observation Form

# Plate Waste

## Observed:

- 4 Schools
- 3 Lunch periods per school
- 8 observers per school
- Sample size = 452 students

I. SELECTED		II. REMAINING							
Category	Item	Quantity (#)	0 "None left"	25%	50%	75%	100% "All left"	NO STUD ADDED	UNKNOWN
Milk	<input type="checkbox"/> White milk								
	<input type="checkbox"/> Chocolate milk								
Juice	<input type="checkbox"/> Orange juice								
	<input type="checkbox"/> Apple juice								
Fruit	<input type="checkbox"/> Apple (whole)								
	<input type="checkbox"/> Orange (whole)								
	<input type="checkbox"/> Banana (whole)								
	<input type="checkbox"/> Fruit cup (cup)								
	<input type="checkbox"/> Grapes (bag)								
	<input type="checkbox"/>								
Vegetable	<input type="checkbox"/> Green salad (box)								
	<input type="checkbox"/> Carrots (bag)								
	<input type="checkbox"/> Lettuce/tomato/pickle (cup)								
	<input type="checkbox"/> Bean salad								
	<input type="checkbox"/> Potatoes (side)								
	<input type="checkbox"/> Potato salad								
Entrées and included side items	<input type="checkbox"/> Cheese pizza								
	<input type="checkbox"/> Pepperoni pizza								
	<input type="checkbox"/> Sub sandwich: <input type="checkbox"/> Lett <input type="checkbox"/> Tom <input type="checkbox"/> Pickle <input type="checkbox"/> Onion								
	<input type="checkbox"/> Hamburger/cheeseburger								
	<input type="checkbox"/> Yogurt boat								
	<input type="checkbox"/> Corn muffin (w/yogurt entrée)								
	<input type="checkbox"/> Chicken Caesar salad								
	<input type="checkbox"/> Chicken tenders/poppers								
	<input type="checkbox"/> Potatoes (w/entrée)								
	<input type="checkbox"/>								
Other	<input type="checkbox"/> Pudding (cup)								
	<input type="checkbox"/> Cookies (bag)								
	<input type="checkbox"/> Potato salad (cup)								
	<input type="checkbox"/> Dinner roll								
	<input type="checkbox"/> Soup								

Figure 2: Plate Waste Form

# Kitchen Manager Surveys

## Purpose:

Collect professional opinions of kitchen managers

## Collected:

- 63 Kitchen managers
- 12 question survey

## Focus:

- Do students have enough time for lunch?
- How much time do students have to eat?

Seattle Public Schools Elementary School Kitchen Manager Survey	
We are working with the University of Washington to study the lunchrooms in our elementary schools. This survey will help us provide them with valuable information about your school. All results will be combined so that your school will not be identifiable in the results. The survey should take only about 15 minutes for you to complete.	
Please complete the survey NO LATER than December 15.	
Thank you!	
1.) School Name _____	
2.) Approximate Seating Capacity of Cafeteria _____	
3.) How many lunch lines do you have in your cafeteria? _____ How many cashiers do you have in your cafeteria? _____ How many key pads do you have in your cafeteria? _____	
4a.) First Lunch Start Time (do not include recess time) _____ First Lunch End Time (do not include recess time) _____ Average Number of Lunches Served First Lunch _____	
4b.) Second Lunch Start Time (do not include recess time) _____ Second Lunch End Time (do not include recess time) _____ Average Number of Lunches Served Second Lunch _____	
4c.) Third Lunch Start Time (do not include recess time) _____ Third Lunch End Time (do not include recess time) _____ Average Number of Lunches Served Third Lunch _____	
5.) Does your school have recess before lunch? Yes      No	
Comments about recess before lunch:   	

Figure 3: Kitchen Manager Survey Template

# School Principals Interviews

## Purpose:

Collect professional opinions of school administrators

## Contacted:

- 8 Principals
- Approximately 20 minutes

## Focus:

- Feedback on existing lunch time structure
- Proposals to help increase seat-time



# Principal Policy Knowledge

## School Board Adopted Procedure H61.01

Provides guidance for principals on structuring school lunch, such as the amount of time students are provided for meals, the timing of meal periods, and encouraging recess before lunch.



# RESULTS

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# RESULTS

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Cafeteria Assessments

## School Lunch Timing

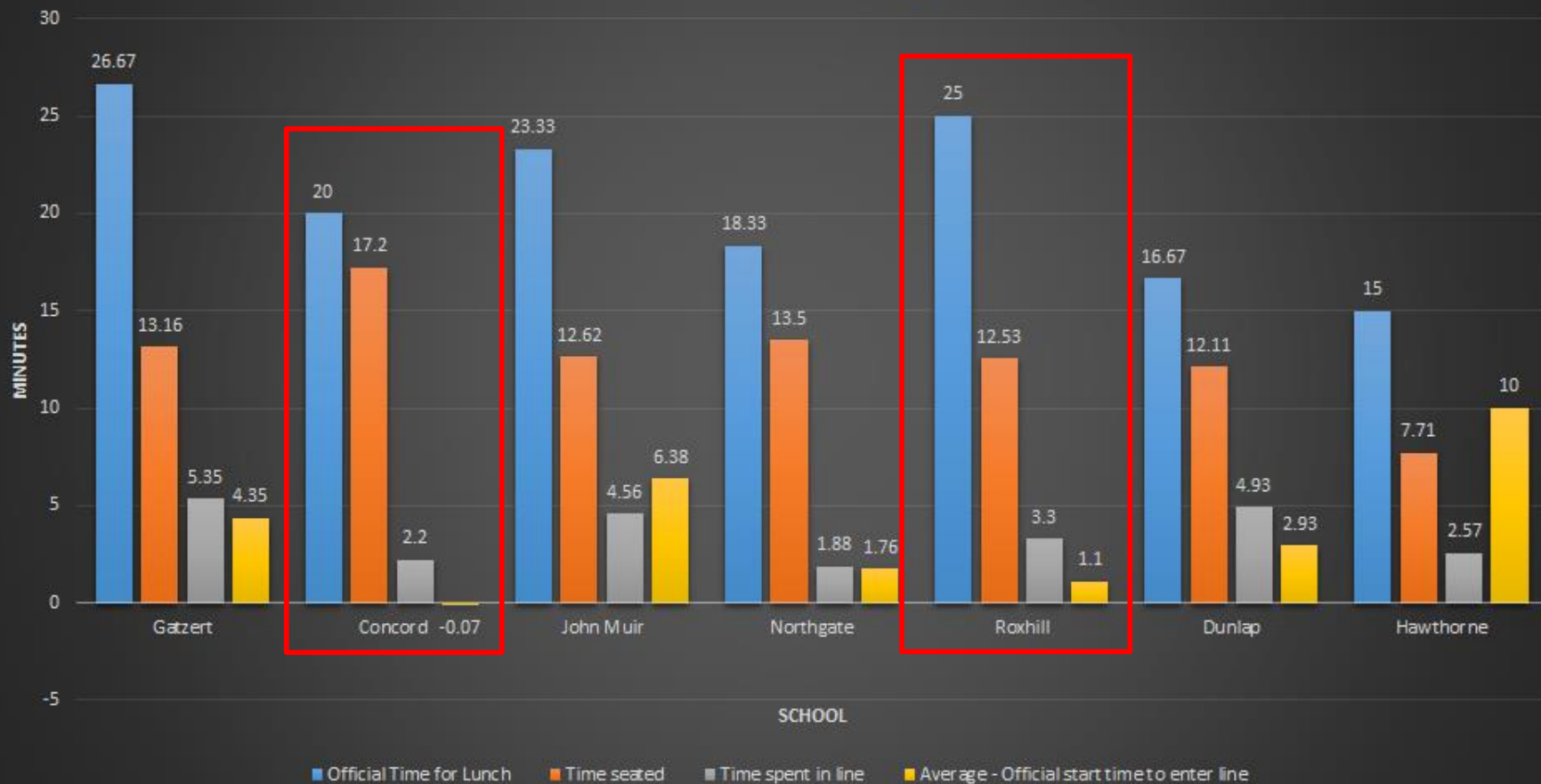


Figure 4: School Lunch Timing

# Breakdown of Official Lunch Time

## On Average:

- **Official lunch time average = 20.71 minutes**
- **Observed lunch time average = 16.23 minutes**
- **Time waiting in line average = 3.54 minutes**
- **Seated time average = 12.69 minutes**

# Plate Consumption Results

## 49.4% of Meal Consumed

- 80% of starches
- 50% of fruits
- 16% of vegetables

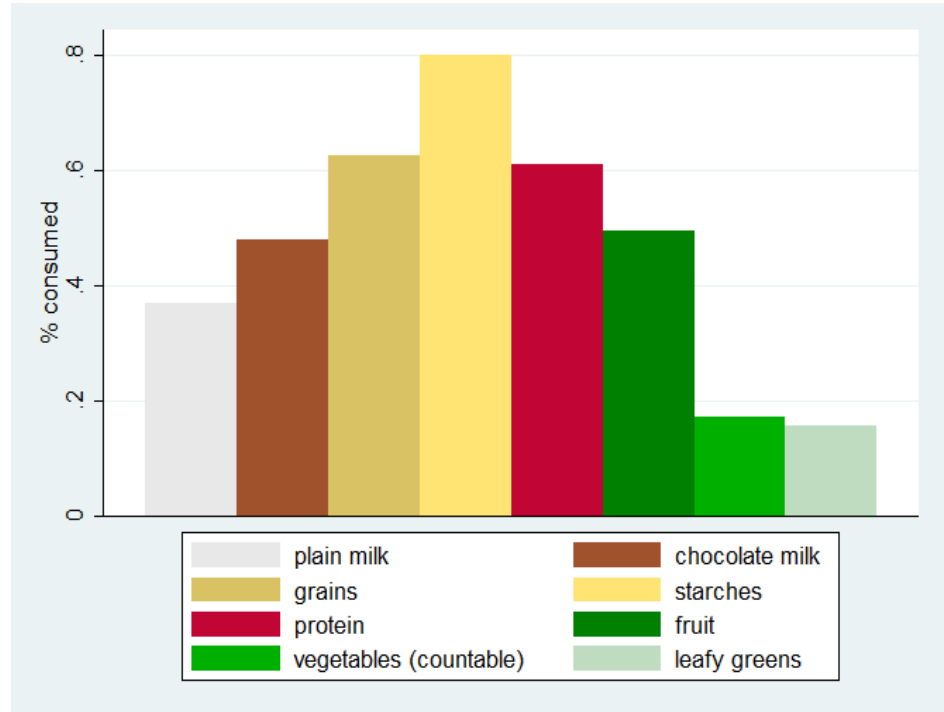


Figure 5: Overall Consumption Rates by Food Group Across All Schools

# Does Seat Time Influence Eating?

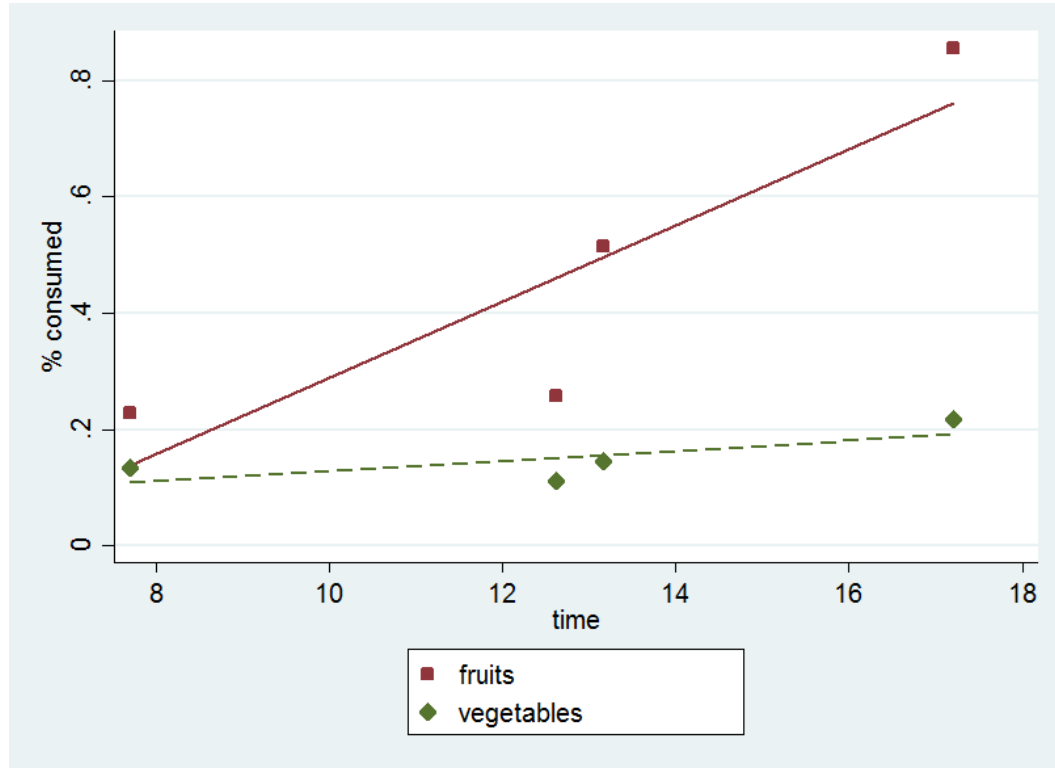


Figure 6: Fruit/vegetable Consumption Rate vs Seat Time

# % All Food Wasted By School

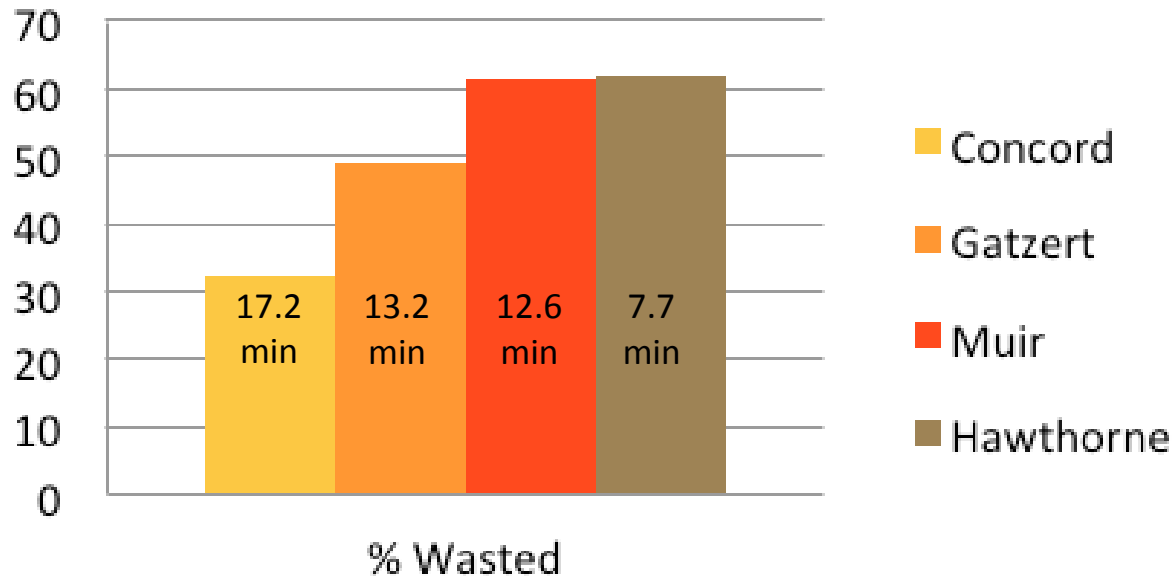


Figure 7: All Food Wasted by School with Seat Times

# RESULTS

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Kitchen Manager Surveys



# Do Students Have Enough Time to Eat Lunch?

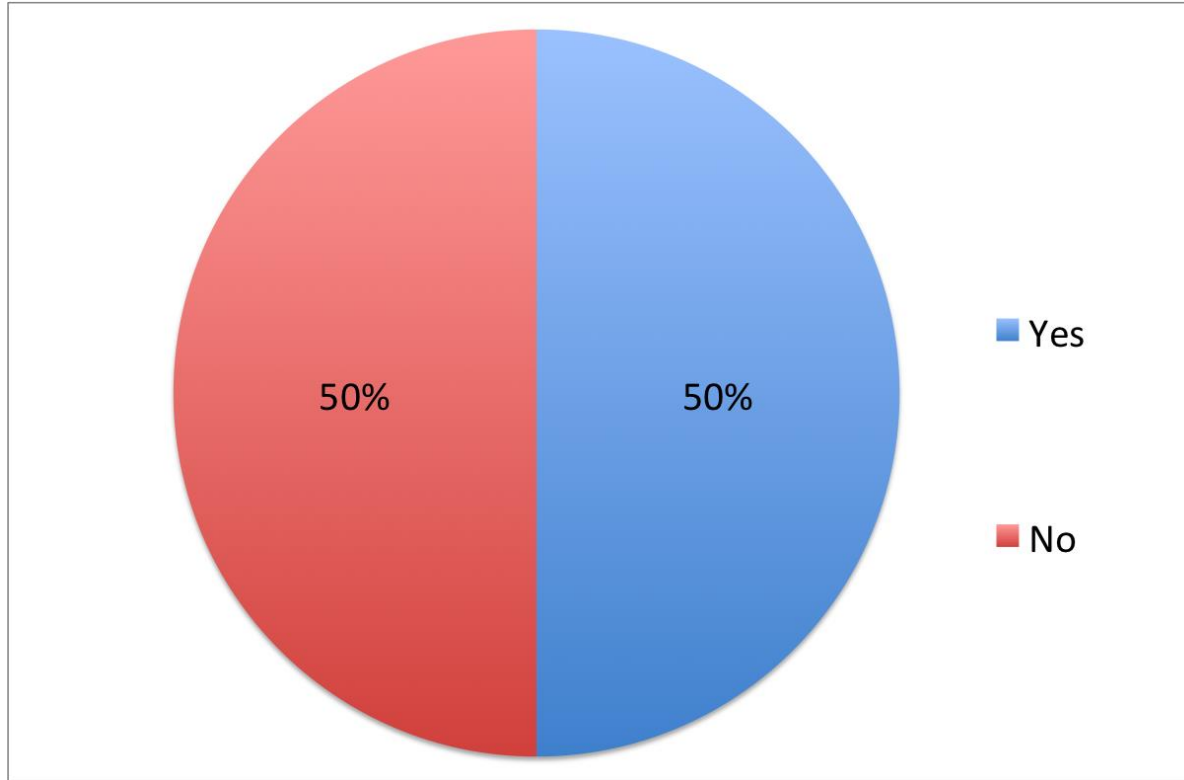


Figure 8: Kitchen Manager Survey: Overall Lunch Time Perception

# Perceived Time to Eat Once Seated

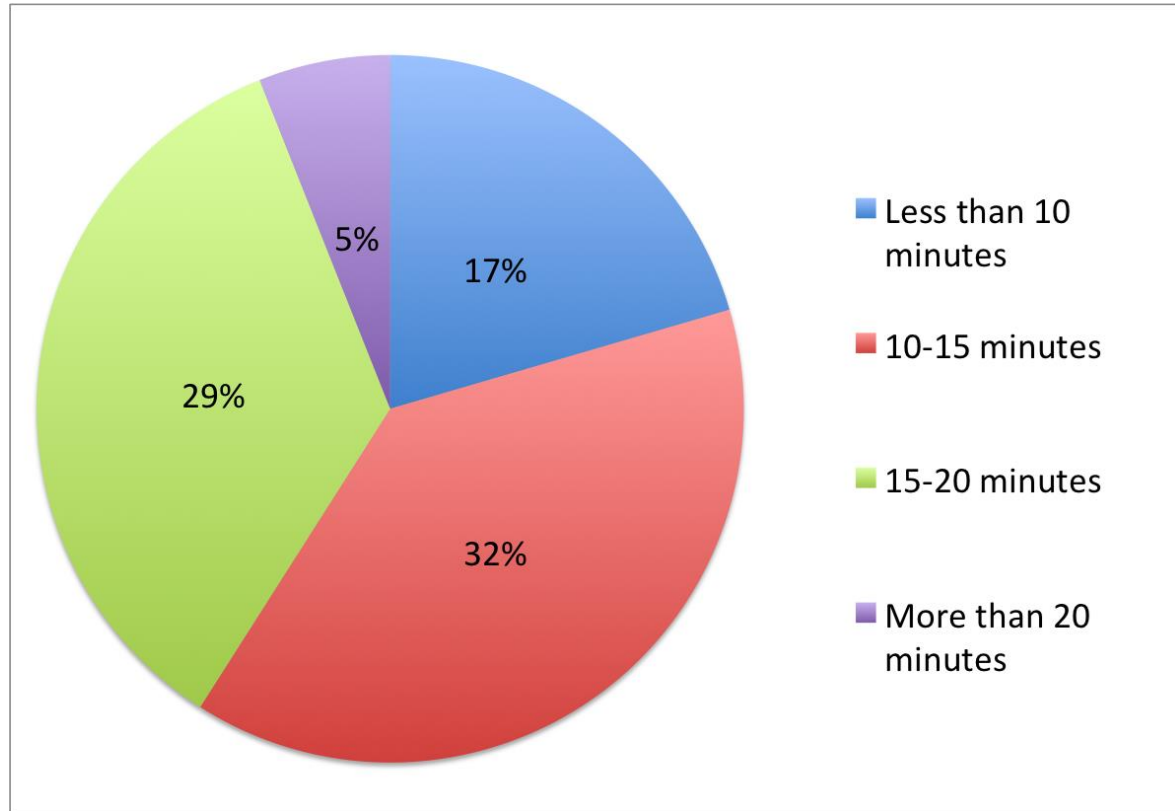


Figure 9: Kitchen Manager Survey: Perceived Eat/Seat Time

# RESULTS

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Principal Interviews

# Interview Responses

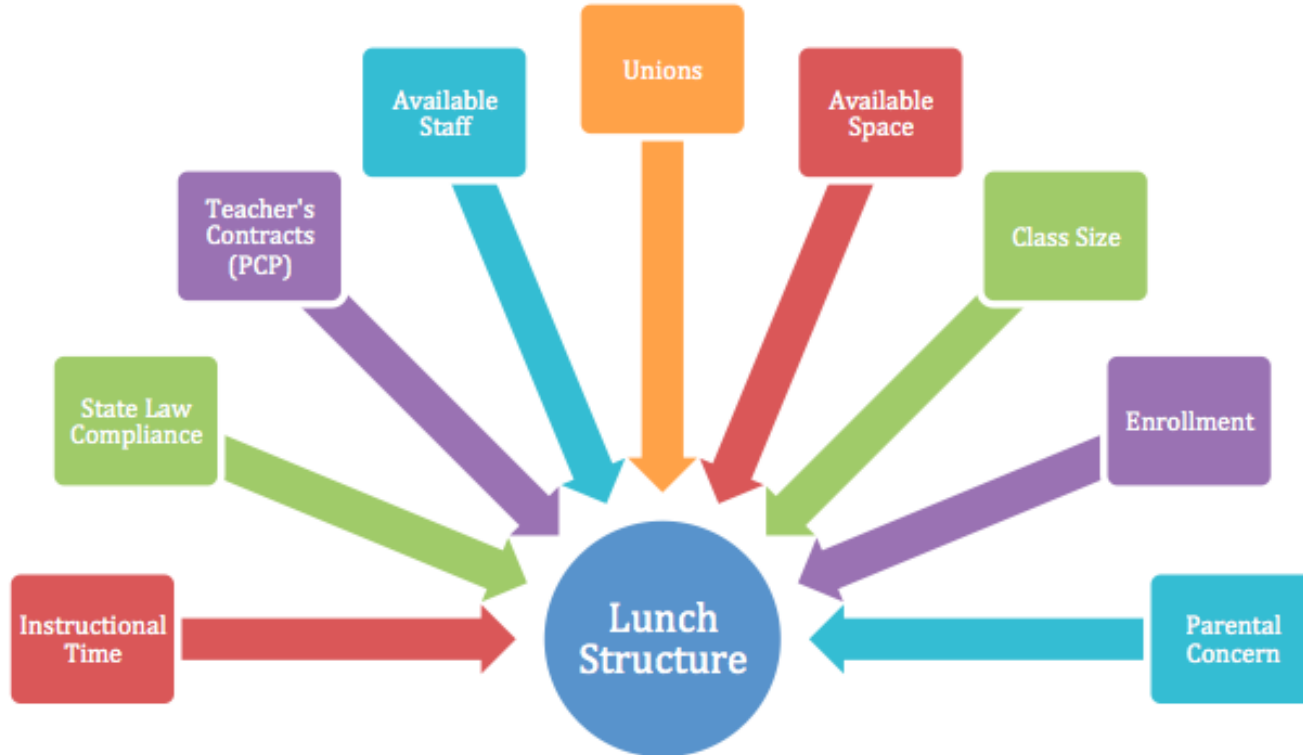
## Is 20 Minutes Enough Time?

- In general, yes--nice to give at least 20 minutes for lunch
- Potential issues with lengthening current lunch time
  - Daily schedule demands
  - Possible student disciplinary issues

## Equitability in Time Across Student Body

- Younger students require more time in the lunchroom
- These students are the most likely to be negatively impacted by time constrictions

# Decision Making Factors on Lunch Schedule

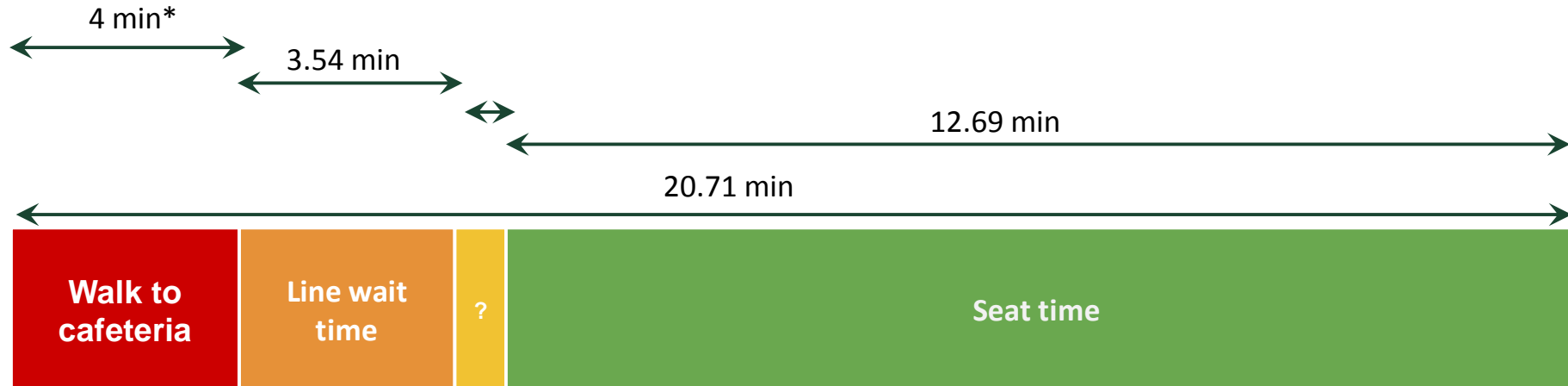


# FINDINGS

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# 1. Short Seat Time

- On average, students are given 20.71 minutes of official lunch time.
  - 3.54 minutes spent in line
  - 4 minutes spent walking to cafeteria\*
- In reality, students only sit for 12.69 minutes to eat.



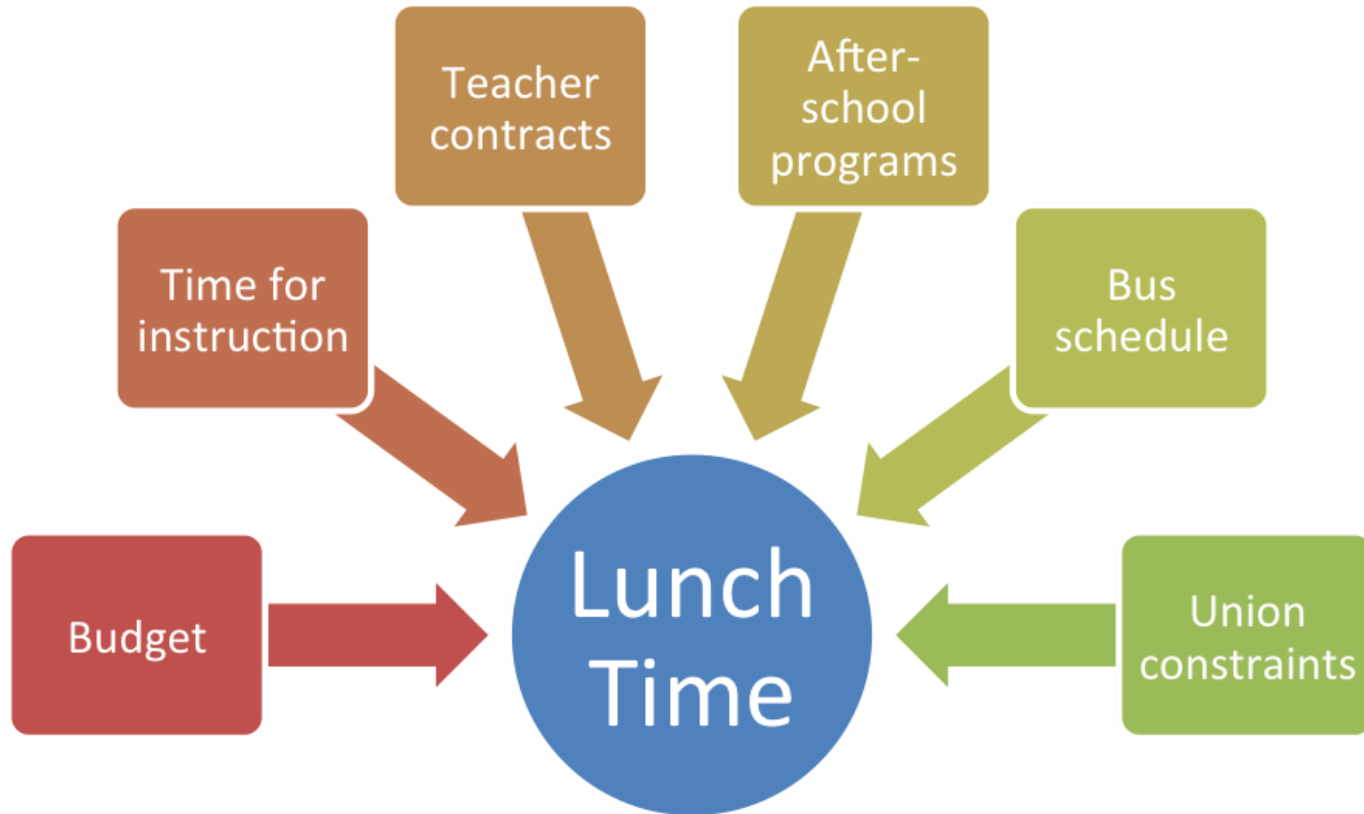
\*calculated using official posted lunch times

## 2. Non-Compliance of Official School Lunch Times

- Collectively, **all 7 schools** are **out of compliance** with district lunch time policy
- Individually, **3 schools** may be in compliance for certain lunch periods
  - **None** of their students had recorded seating times of **20 minutes**



### 3. Possible Barriers to a Lunch Period Extension



# 4. Time Constraints and Nutrient Consumption

- Students with **longer seat-time consumed more overall and more fruits and vegetables (FV).**
- **Consistent with previous literature:**
  - Students with longer lunch periods consumed more food and nutrients
  - Students with limited time to eat tended to consume what they like most (e.g. starches)
- **Implications:**
  - Undernourishment can affect students' growth and school performance

	<b>Concord Elementary</b>	<b>Hawthorne Elementary</b>
<b>Seat time</b>	18 minutes	8 minutes
<b>Overall consumption</b>	67.8%	38.7%
<b>FV consumption</b>	37.7%	16.5%

## 5. Impact of Supervision on Eating Behaviors

- Lunchroom supervisor behavior may impact student eating habits
- At Concord, supervisors positively engaged with students
  - Also has longest seated time, highest FV consumption, lowest plate waste
- **Implications:**
  - Possible opportunity to provide further supervisor training that encourages better eating habits

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## 6. Implication of Recess Timing

- 44% of Seattle Public Schools **do not have recess** before lunch
- Manager Survey's revealed that recess prior to lunch would **increase seat time**
- Principals see recess before lunch as a way to **encourage students** to consume their lunch

**Restrictions:** School space, supervisor requirements

## 7. Lunch Scheduling and Food Consumption

### Early Lunch Periods

- Highest waste
- Decreased overall consumption



# Summary of Findings

1. Short seat time
2. Non-compliance of official school lunch times
3. Possible barriers to lunch period extension
4. Time constraints and effects on nutrient consumption
5. Impact of supervision on eating behaviors
6. Implications of recess timing
7. Lunch scheduling and food composition

# RECOMMENDATIONS

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# Recommendations

1. Continued evaluation of lunchtime and school compliance
2. Increase collaboration between school administrators and nutrition service staff
3. Share the importance of school lunch with stakeholders (principals, teachers, and nutrition services staff)
4. Advocate for lunchtime scheduling

# Recommendations Cont.

5. Schedule recess prior to lunch
6. Utilize more discrete recess cues
7. Train lunchroom supervisors to encourage positive eating behaviors in students
8. Include adequate time to get to the cafeteria



# LIMITATIONS

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# Limitations

1. Complexity of analyzing factors impacting seat time
2. Generalizability of the sample
3. Internal validity

# CONCLUSIONS

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# Conclusions

1. Every student deserves **adequate time** to eat and play
2. Increased **cross-sectoral conversations** to ensure compliance
3. **Support** a healthy and responsive school environment
4. Address the aforementioned within the context of the **unique culture** of each school

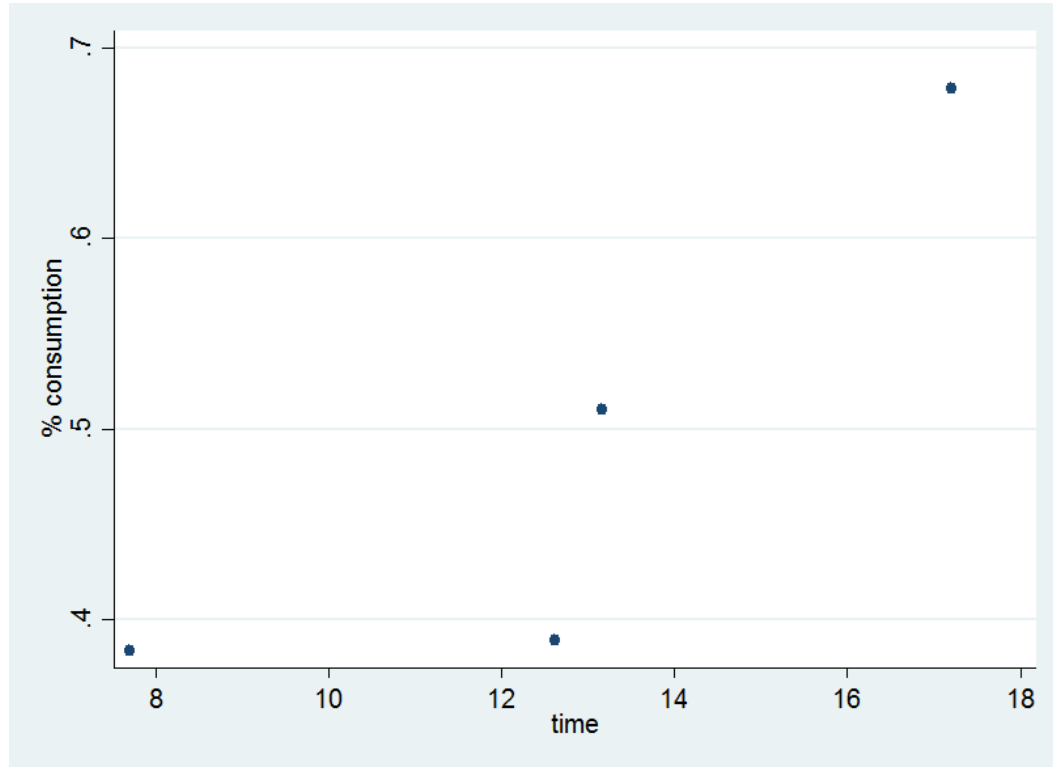
# APPENDIX SLIDES

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# Objectives

1. **Assess current lunchroom conditions** (Observational study)
2. **Assess drivers of seat time** (Observational study)
3. **Collect professional opinions of kitchen managers** (Manager surveys)
4. **Collect professional opinions of school administrators** (Principal interviews)
5. **Inform future policy recommendations** (Final presentation and final report)

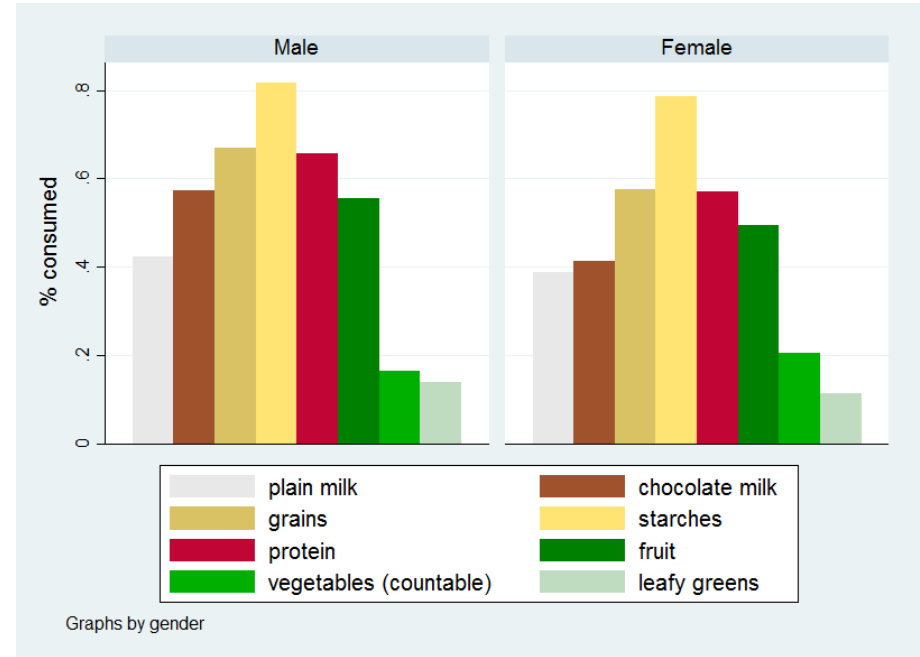
# Does Seat Time Influence Eating?



Overall consumption rate v.s. Seat time

# What Factors Influence Eating?

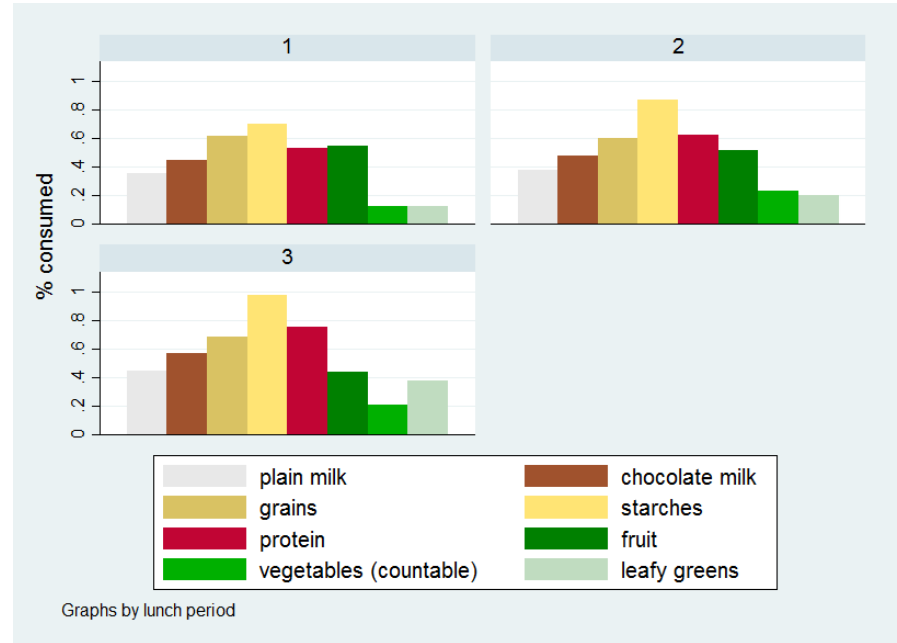
- Patterns of plate waste are similar in boys and girls
- Girls generally waste slightly more food than boys (similar trend found in literature), but in this population, boys wasted slightly more vegetables than girls.





# What Factors Influence Eating?

- In the four schools, lunch period is a **general proxy for age**
  - In general, younger students eat in earlier lunch periods and older students eat in later lunch periods
- Lunch period #3 had overall highest consumption rates across all schools



# Does Seat Time Influence Eating?

School	Plain Milk	Chocolate Milk	Grain	Starches	Protein	Fruit	Vegetables	Seated Time	% FRL	Seating Capacity
<b>Concord (n = 121)</b>	<b>0.53</b>	<b>0.66</b>	<b>0.68</b>	<b>0.79</b>	<b>0.63</b>	<b>0.86</b>	<b>0.42</b>	<b>17.2</b>	<b>81.64%</b>	<b>?</b>
Gatzert (n = 114)	0.51	0.47	0.70	0.82	0.57	0.51	0.15	13.16	79.55%	515
Muir (n = 127)	0.24	0.37	0.53	NA	0.61	0.26	0.18	12.62	65.99%	450
Hawthorne (n = 95)	0.13	0.41	0.61	NA	0.64	0.23	0.10	7.71	70.14%	207

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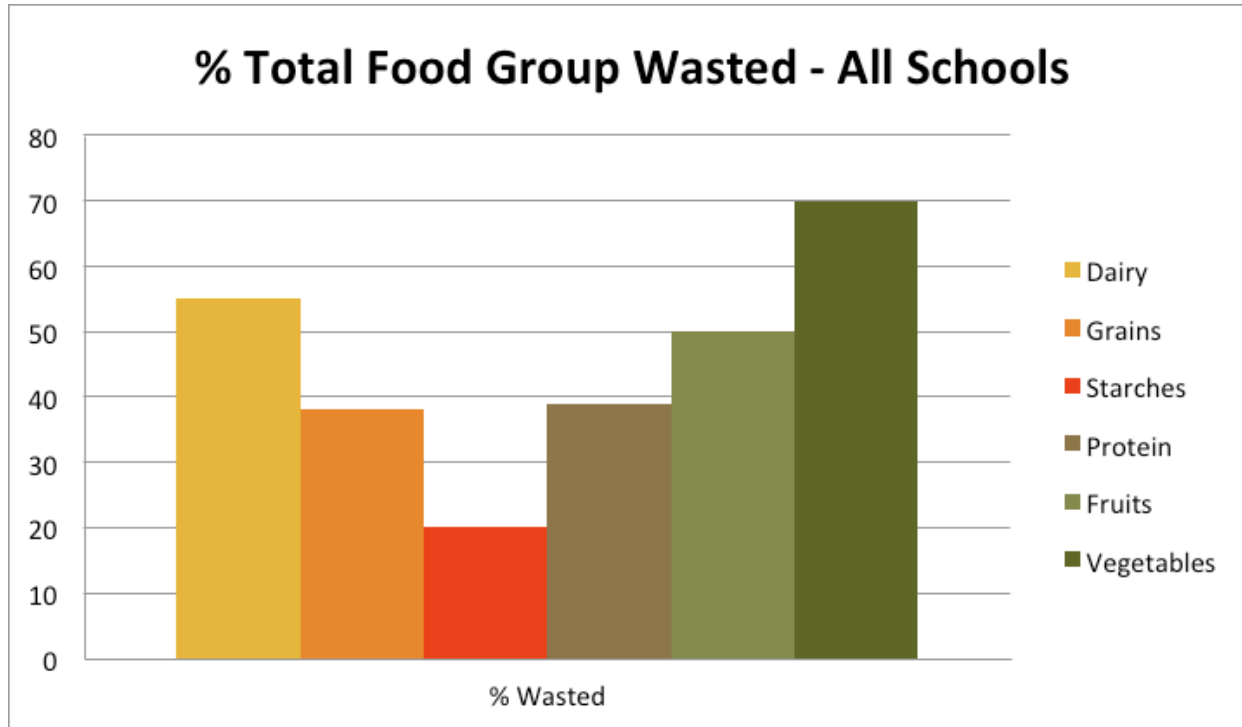
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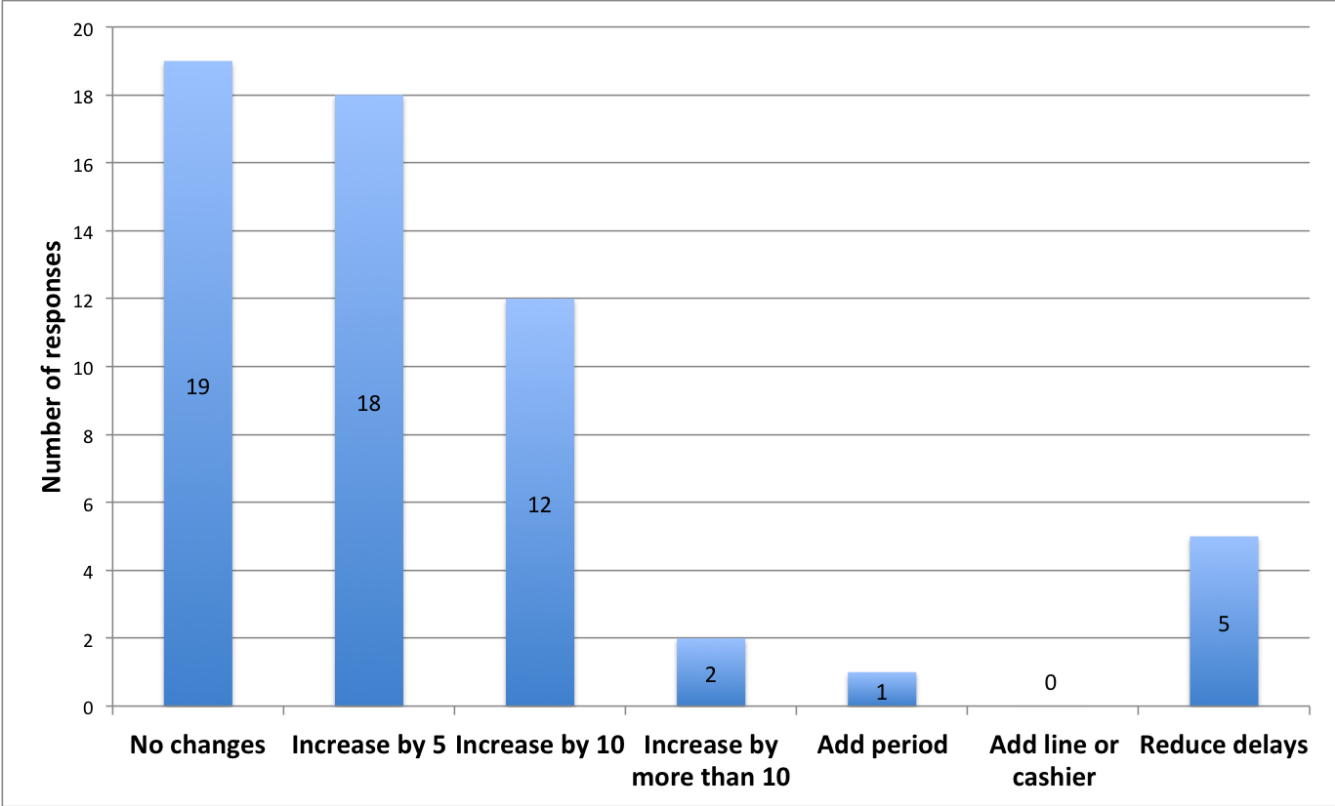
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# Percent Wasted Food Groups



# Suggested Changes



## Proposal 1: Adding time to the school day

- Nice idea but far too many hindering factors make this impossible

## Proposal 2: Adding another lunch period

- This could work for the kids but very difficult to arrange appropriate staff

## Proposal 3: Reconfiguring cafeteria layout (adding lines)

- Deemed difficult for students and staff in already limited spaces

## Proposal 4: Adding more monitors

- This would be helpful if budget allowed and staff were trained properly