The Effects of Food Waste Education on Student Knowledge, Attitudes, and Plate Waste

REBECCA BUSSE
PURDUE UNIVERSITY-DEPARTMENT OF FORESTRY AND NATURAL RESOURCES
NACTA JUNE 14TH 2018
The Food Waste Problem

- 30-40%, or 133 billion lb. food is wasted in the U.S.
- U.S. schools spend > $1 billion on wasted food annually-26% of their food budget
- Largest component of school waste

Enough to fill Lucas Oil Stadium every day for a year!
Addressing A Need

- Limited lessons
- Environmental education
- Limited research
Lessons Used

- Food Waste and the Environment
- Solutions to Food Waste
- Pick on ME
Goals

- **Improve**
  - Knowledge
  - Attitude
  - Behavior
  - Behavioral intention
  - Knowledge perception
- **Reduce food waste**
Experimental Design

- 2nd and 5th grade students in two Indiana schools

- School 1
  - Grade 2: 9 Treatment, 11 Control
  - Grade 5: 17 Treatment, 28 Control
  - Suburban
  - 24:1 Student teacher ratio
  - 48% free/reduced price lunch eligible

- School 2
  - Grade 2: 11 Treatment, 17 Control
  - Grade 5: 10 Treatment, 10 Control
  - Rural
  - 19:1 Student teacher ratio
  - 39% free/reduced price lunch eligible
Methods Outline

- Student surveys
- Student interviews
- Weighing food waste

Survey Results Change

Mean Change in Knowledge Between Groups

- Treatment and Control
- Control
- Treatment

Mean Change in Attitude Between Groups

- Treatment and Control
- Control
- Treatment

Error Bars: 95% CI
Survey Results Change Continued

Mean Change in Behavior Between Groups

Mean Change in Behavioral Intention Between Groups

Error Bars: 95% CI
Survey Conclusions

- Most responses varied by school and grade
  - Grade levels: Fifth grade learn more environmental topics; younger students are more picky
  - Schools: School 2 rural and lower student: teacher ratio, lower free/reduced lunch population

https://www.greatschools.org/gk/articles/5th-grade-science-worksheets/
Interview Results - max variation sampling (upper and lower)

- Knowledge: more upper-scoring treatment students knew what food waste is (source of variation)
- Fifth graders more likely to know environmental effects and where food waste goes post-education
- Fifth graders greater perceived control than second graders (source of variation)
- All treatment students more likely to mention communication and more solutions post-education
Food Waste Results

- Researcher presence
- Communication between students
Overall Conclusions

- Food waste environmental education is effective at increasing student knowledge
- Students were more likely to mention communication as a solution to food waste
- Students knew more solutions to food waste
- Differences in demographics
- Perceived control influential
- Reduced student food waste
  - Researcher presence and communication
Questions?