



Reducing Student Food Waste on Campus



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Introduction

Recent environmental and social justice movements have emphasized the importance of reducing food waste, due to the energy required to produce and transport food, as well as the millions of individuals living in food-deprived conditions. In the United States, food is the number one material taking up landfill space, producing methane gas – one of the most harmful atmospheric pollutants.

While some food waste is inevitable, restaurants and cafeterias not only produce excessive amounts of consumer food waste from unfinished meals but also serve thousands daily, and therefore hold potential for addressing this large-scale issue.

The current study focused on the primary cafeteria on the campus of the University of Wisconsin-Eau Claire. This location was chosen because it is a buffet-style (all-you-can-eat) dining option, with students experiencing no aversive (i.e., money loss) contingencies for taking more food than they can feasibly consume.

Collection of Data and Experimental Manipulations

After dining, students put their plates and leftover food on a conveyor belt, and workers empty uneaten food into composting bins. Student researchers weighed the food bins via an in-ground scale at 2pm and 9pm, five days per week, to generate the weight of all leftover food from breakfast, lunch, and dinner.

When food waste values became relatively stable, researchers introduced an infographic on the tables in the cafeteria and dining areas around campus. The infographic provided facts about food waste and the impact such waste can have on the environment. See Figure 1 for sample infographics.

Over two subsequent semesters, researchers began publicly posting the prior week's amount of food waste, challenging students to reduce food waste and beat the prior number. Drawing from research showing that challenging people to reduce their energy consumption can produce effective energy reductions, researchers attempted to replicate this with food waste amounts. Several weeks into each semester, waste numbers in pounds were posted at the entrance of the cafeteria and updated weekly.

Figure 3.

Semester-long observations prior to and post-intervention. After implementing the infographics (day 29) there is a transient decrease in food waste per student

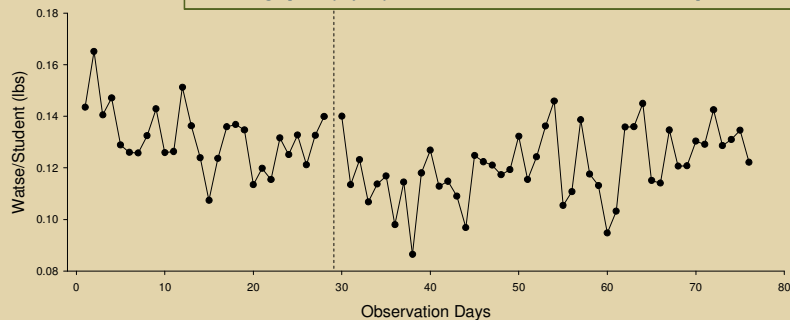


Figure 4.

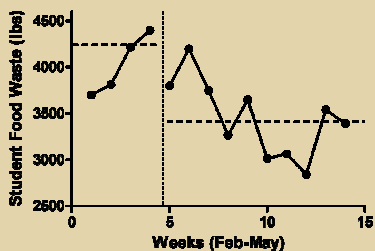


Figure 4. Food waste (lbs) as a function of week of the semester, with number of students controlled for per week. After posting waste amount (week 5), there is a clear decrease in food waste per student.

Figure 5. Food waste (lbs) as a function of week of the semester, with number of students controlled for per week. Weekly waste amounts were posted after Week 9.

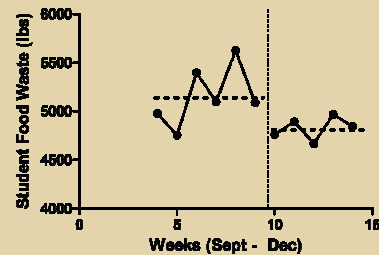
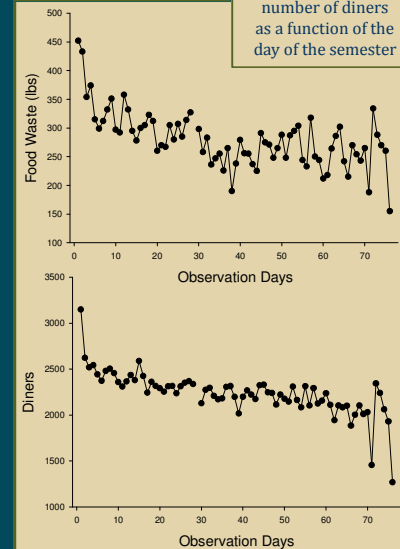


Figure 1: Sample Infographics



Figure 2.

Food waste and number of diners as a function of the day of the semester



Results and Discussion

During the initial days of the semester (days 1-4), we have found that many students sample food choices, leading to more waste (see top panel of Figure 2).

Importantly, Figure 2 displays the sheer waste (lbs) as a function of the day of the semester. While waste decreases throughout the semester, the bottom panel shows that student attendance also decreases. Therefore, any food-reduction studies not accounting for waste/patron should be viewed with caution.

Figure 3 displays the food waste per student during pre- and post- infographic intervention. While the infographics seemed to produce an initial decrease in food waste, this effect was not long-lasting.

Publicly posting food waste amounts and challenging students to beat their prior week's waste level had a more profound effect on decreasing food waste. This intervention was subsequently replicated and both times waste was reduced, equating to a projected annual reduction in waste of 30,236 and 17,252 lbs. Given the promise of this manipulation, future research could examine how to implement similar interventions in other locations with ease.