Abstract

The purpose of this project was to educate housekeepers about the importance of sustainable practices in their work as well as everyday life. This was done in order to mitigate housekeepers’ concerns about new practices being less effective than previous procedures. During the Fall of 2018, we held meetings with focus groups of housekeepers from all three shifts as well as building managers to determine their current knowledge and attitudes towards housekeeping changes and sustainability in general. In the Spring of 2019, presentations were given to approximately 200 housekeepers to educate them on implemented green cleaning practices and to attempt to shift housekeeper’s perceptions and understanding of sustainability initiatives and principles. Survey findings revealed that the presentations were effective in achieving these goals, and the presentation will likely be continued to reach all 500+ housekeepers by Interns and Co-op students in the Summer of 2019.

Introduction

As a part of the Housekeeping Sustainability project, we partnered with the University of Pennsylvania Housekeeping department, a division of the Facilities and Real Estate Services (FRES). The goal of this partnership was for us to educate housekeepers about the sustainability efforts happening at Penn and why changes in housekeeping practices are important.

Project Overview

From focus group meetings with housekeepers from all three shifts and housekeeping managers from all four undergraduate schools, we found that not many housekeepers are aware of what sustainability encompasses and why sustainable changes are being made at Penn. Many housekeepers knew that recycling was related to sustainability, but most did not realize their everyday housekeeping practices can impact sustainability, including cleaning chemicals, composting, transportation, and energy usage. An overwhelming impression among housekeepers was that the changes in chemicals and cleaning practices were to simply reduce costs instead of improving health and sustainability at Penn. From the perspectives we gathered from the focus groups, we put together a presentation explaining concepts of sustainability, how sustainability affects housekeepers specifically, and how individuals can make a difference.

Research Findings

To compare what housekeepers and housekeeping managers knew and felt about sustainability, housekeepers and managers were asked to fill out a questionnaire before and after our
presentation. A total of 157 pre-presentation responses were received and 117 post-presentation responses. The four questions and the pre- and post-presentation results in blue and green respectively are as follows:

![How much do you know about sustainability in general?](image1)

![How much do you know about sustainability in general?](image2)

Figure 1: How much do you know about sustainability in general? (1 is none, 7 is a lot)

*Before our presentation, the distribution is centered around a medium level of knowledge with a median of 5 and mean of 4.95 out of 7. However, after our presentation, the distribution is more left-skewed with the majority of people rating their knowledge of sustainability at a higher level with a median of 6 and mean of 5.75. This result suggests that our presentation helped increase housekeepers’ knowledge about sustainability in general that they believed they knew more about sustainability.*
The distribution of how much people care about sustainability changed less than that for the first question about knowledge about sustainability. Both distributions are left-skewed, with most people caring about sustainability at a level of 7 out of 7. The mean increased by about 0.5 from 5.66 to 6.13, while the median increased from 6 to 7. The minimal change in the mean suggests that our presentation had limited impact in changing how much housekeepers and housekeeping managers cared about sustainability. However, the increase even from an already high score of 6 to the highest score of 7 indicates that our presentation positively impacted how much housekeepers care about sustainability even at the high levels at which they started.
Figure 3: How much do you know about Penn’s sustainability efforts?

The percentage of people who knew close to nothing about Penn’s sustainability efforts (levels 1-2 out of 7) decreased from 16% to 1%. The mean significantly increased by about 1.24 points from the lowest among all four questions of 4.66 to 5.82. The median also increased from 5 to 6. This result indicates that our presentation helped people who had limited knowledge of Penn’s sustainability efforts become more aware of the changes. However, the small change in the distribution in the higher levels of knowledge (5-6 out of 7) suggests that our presentation did not increase the knowledge of Penn’s sustainability efforts for people who believed they already knew about these efforts.
The change in results for this question was similar to those from the second question (How much do you care about sustainability?). Like the second question, both the pre- and post-presentation distributions are left-skewed with most people having a high level of understanding of how to be sustainable in their daily lives. Similarly, the mean increased by about 0.49 from 5.57 to 6.06 and while the median remained the same at 6. However, the percentage of people who had limited knowledge of how to be sustainable (levels 1-3 out of 7) decreased from 11% to 3%. This suggests that our presentation helped people who had limited knowledge about how to be sustainable in their daily lives know more ways to incorporate sustainability into their lives.

Results and Evaluation

The focus groups proved to be an enlightening way to determine the information that we needed to address during our presentations. During focus group meetings, the vast majority of housekeepers were very receptive to talking about their knowledge on sustainability, and the building managers that we met were appreciative about the work being done. Another aspect of the project that worked very well was the surveys—there was a very high participation rate in both iterations. A total of 157 responses to the pre-presentation and 117 responses to the post-presentation survey
were recorded, and presentations were given to approximately 200 total housekeepers and building managers.

Although there were high rates of attendance and participation in the surveys, there were often difficulties in getting housekeepers to open up and ask questions during and after the presentations. However, it was evident that when there was one housekeeper who was more vocal, the entire group would be more engaged and ask questions. In terms of the survey results, it is also difficult to know how biased the results are. It is likely that post-presentation surveys are more biased and skewed towards higher appreciation and understanding of sustainable initiatives. Since the housekeepers who were completing the survey had the information fresh in their minds and because Eco-Reps as well as their upper managers were present, it is likely that many selected higher responses, leading to slightly right-skewed data.

A possible extension to our project, if it were to be repeated, would be to conduct an additional post-presentation survey a month or so after our presentation. This would allow us to see if housekeepers retain any knowledge or perspectives they gained from our presentation.

During our focus groups, we heard a lot of grievances from housekeepers about non-sustainable practices from others on-campus, be it students, faculty, staff, or visitors. Common themes addressed were incorrect recycling practices, leaving lights on at night, and setting the thermostat at unnecessary temperatures. Therefore, in the future, we would like to give similar presentations to students and faculty to change the culture on campus. Many housekeepers expressed frustration that students and faculty were not doing their part in being sustainable and recommended that our presentation should extend to focus on students and faculty since we each play a key role in the University’s sustainability efforts. Reaching all students and faculty in a meaningful way would be even more challenging than reaching 500+ housekeepers, posing a barrier for this next step. However, we believe even more now, after hearing from housekeepers, that raising awareness among students and faculty is key to improving sustainability at Penn.

**Conclusion**

We conclude that presentations are an effective way to increase knowledge among housekeeping staff. While we cannot conclude that the presentations will have a lasting effect on housekeeping staff, the positive feedback we have received implies that the presentations are an effective step in increasing sustainability awareness among housekeepers.

**Appendices**

A. Key Stakeholders Appendix
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   2. Wendy Sparks, wsparks@upenn.edu
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B. View the slideshow here [insert hyperlink to website]