

University of British Columbia

Social Ecological Economic Development Studies (SEEDS) Sustainability Program

Student Research Report

Examining the Effect of Gain/Loss Framing and Video/Text Mediums on Comprehension

Prepared by: Manuela Diaz, Peijia Ding, Amirhossein Hamed Azimi, Valeria Moncada, Brian Ponce de Leon

Prepared for:

Course Code: PSYC 421

University of British Columbia

Date: 13 April 2021

Disclaimer: "UBC SEEDS Sustainability Program provides students with the opportunity to share the findings of their studies, as well as their opinions, conclusions and recommendations with the UBC community. The reader should bear in mind that this is a student research project and is not an official document of UBC. Furthermore, readers should bear in mind that these reports may not reflect the current status of activities at UBC. We urge you to contact the research persons mentioned in a report or the SEEDS Sustainability Program representative about the current status of the subject matter of a report".



**UBC Social Ecological Economic Development Studies (SEEDS) Sustainability Program
Student Research Report**

Examining the Effect of Gain/Loss Framing and Video/Text Mediums on Comprehension

Manuela Diaz, Peijia Ding, Amirhossein Hamed Azimi, Valeria Moncada, Brian Ponce de Leon

University of British Columbia

Course: PSYC 421

Themes: Waste, Food-ware, Procurement

Date: April 13th, 2021

Executive Summary

Since 2010, UBC has been committed to reaching key milestones in sustainability. One branch of this initiative is informing campus managers about sustainable food-ware, including containers, cups and cutlery, and encouraging them to procure food-ware that are sustainable or recyclable. Previously, UBC shared a document of sustainable food-ware to inform campus managers to purchase sustainable options, however little compliance has been observed, thus a new video format will be used to observe comprehension differences between the two mediums.

Preliminary research suggests a video format may enhance comprehension therefore the study will test the two different mediums attached to a loss or gain framed message in order to observe the impact on comprehension. Background research suggests that a loss-frame paired with a video would increase comprehension. The survey created outlined 4 conditions and a loss-framed video is hypothesized to demonstrate the greatest effect size. No statistical difference was observed between the 4 conditions, which may be due to the small sample size and incorrect population. The hypothesis was not proven, however, all video conditions tended to perform better than text. In particular, the loss-framed video obtained the best comprehension score out of all 4, which prompts opportunities for further research.

Key Words: Waste, Food-ware, Procurement, Framing, Video, Text, Sustainability

INTRODUCTION

Over the recent years, there has been an increase in public awareness on the unsustainable nature of single use food-ware containers, as these are frequently disposed of in landfills or end up in incinerators. Not only do these deplete non-renewable resources, they also introduce chemicals into the air, water and soils which contribute to climate change. In order to mitigate the impacts of these single-use food-ware transactions, universities and governments have developed programs to promote recyclable, compostable and reusable options, accelerate sustainable practices and to minimize carbon footprint. The Environmental Protection Agency reports that since 1980, the United States recycling rates have been steadily increasing, with the last recorded value of 32.1% of all recyclable products recycled in 2018.

At the University of British Columbia (UBC), these concerns and the importance of sustainability within the university's culture have led to the creation of the Zero Waste Action Plan, an initiative that aims to move UBC towards a greener future. Under the department of Campus and Community Planning, the goal of the Zero Waste Action Plan is to propel UBC towards a future where all unwanted products and materials can be reused or recycled in order to decrease waste disposal every year. Food outlet managers on the UBC campus receive a "Zero Waste Food Ware Strategy" PDF that includes guidelines that aids them through the correct single use items procurement decisions, in order to meet target sustainability goals. However, interpretation of these guidelines has not led to significant changes in sustainable food-ware procurement choices, which has led the client to produce a 5-minute educational video communicating sustainable food ware options. This prompts the question, is a video format more effective in communicating and enabling the understanding of appropriate food-ware procurement decisions compared to a written document format?

Previous studies have sought to address whether a video medium of communication is a more effective manner to transmit and teach information as opposed to a written format. Merk et al. (2011) observed the effectiveness of learning complex content via interactive videos versus illustrated textbooks and discovered that videos were comparable or even superior to a traditional text form of teaching information. Furthermore, video modules have demonstrated to be a more effective form of learning in clinical settings compared to text-based ones, where the results for video conditions scored higher in both primary tests conducted after reviewing the information and in follow up tests 1 month later (Buch et al., 2014). Videos have even more effectiveness in increasing and changing people's perception of scientific agreement (Kerr & Wilson, 2018). Throughout these studies, it is suggested that the effective nature of the videos may be due to the additional features offered such as the extraction of key details and the interactive nature of being able to stop the video to grasp and important information. As Marx et al. (2007) suggests, communication methods that maximize experiential processes such as using narratives often displayed in video formats can enhance beliefs and behaviors. In concordance, these may be more engaging, enhancing central processing of messages which increase attention and comprehension (Kerr & Wilson, 2018). It is proposed that the findings of these studies may be generalized to our proposed research question. Similar to these studies, both the video and text mediums provided by the client convey the same type of information. However, the video format highlights key information in a more distinct way, which may lead video conditions to be more effective at communicating the correct food-ware procurement decisions.

Furthermore, research suggests that framing effects can influence decision-making. For example, emphasizing environmental, economic and moral dimensions in framed messages has demonstrated a positive effect on individuals' engagement with climate change (Li & Su, 2018). The prospect theory focuses on how people make decisions between alternatives that involve risk: perceived losses or perceived gains. Although there are mixed results about which type of framing is more effective, most recent research shows that negative framing in environmental contexts tends to be more effective in communicating the effects of climate change (Kahneman & Tversky, 2013; Karpinska-Krakowiak et al., 2020; Grazzini, 2018). Specifically, loss-framed messaging seems to have a greater influence in decision making than gain-framed messaging because people have more sensitivity towards messages that suggests a negative impact on the environment. (Grazzini, 2018; Cheng et al., 2011).

The opportunity available is the limited research on the correlation between gain-loss framing and video versus written formats. Thus, this study will address this gap and answer the following: How does loss-gain framing influence comprehension of UBC's Zero Waste Guidelines between communication mediums? It is hypothesized that a loss-framed video will increase comprehension of the UBC's zero waste guidelines in comparison to a gain-framed video, loss/gain-framed text version displaying the same information.

METHODS

Participants and Demographics

By means of G-Power, utilizing an 0.05 alpha value and a 0.8 power, the power analysis required a minimum 128 participants for a significant interaction. In total, 118 individuals began the survey, but 72 participants did not complete the survey which indicates a large dropout rate of 61%. After excluding participants who did not complete the survey, the sample size obtained was 46 participants ($n = 46$) among which 53% were male, 44% were female and 2% of participants did not choose to identify. The average age of participants was 21 years of age and they were all affiliated to UBC.

Measures

Based on the concerns voiced by the client, in conjunction with the factual reasoning of the food-ware procurement decisions in the materials provided; the dependent variable of comprehension was operationally defined as knowledge retention. The quantitative representation of this variable was the participant's scores calculated from the 3 survey questions. These 3 multiple choice questions covered the types of cups, cutleries and containers that were directly addressed in the video and written guidelines. The data collected on Qualtrics was converted to a numerical score based on the sum of correct and incorrect answers chosen per question. The score was achieved by assigning a value of (-1) to each incorrect answer, and a value of (+1) to each correct answer. Thus, a high, positive participant score would be interpreted as an indicator of a more comprehensive understanding of UBC's zero waste guidelines through its assigned condition.

Conditions

To observe the effect of loss/gain framing in the comprehension in different communication mediums of UBC's zero waste guidelines to UBC students. The study was a between-subjects design as each participant was randomly assigned to only one condition. All of

which consisted of the participants reading a framed message about the information (See Appendix A) they will be presented with and prompting them to imagine themselves as UBC cafe manager. Both mediums were provided by UBC Campus and Community Planning and covered the same information (See Appendix C and D). The 4 conditions are as follows: gain framed message followed by the text, loss framed message followed by the text, gain-framed message followed by video and loss-framed message followed by the video. After watching the video or reading the guidelines, all participants answered the same survey question regarding the food-ware procurement decisions and some basic demographic questions (See Appendix B).

Procedure

A Qualtrics survey was distributed online across different social media channels, through the authors UBC classes, via UBC Facebook groups with the aim of recruiting as many UBC campus frequenters. The data collection ran for 4 weeks in total, and there was no additional incentive to motivate people to participate in the study. There were 16 participants in the gain-frame text condition, 10 participants in the loss-frame text, 9 in the gain-frame video, and 11 in the loss-frame video condition. The participants viewed the consent form, and after agreeing to participate in the study, they were randomly assigned to one of the four conditions mentioned before. A mandatory waiting time was deployed in every condition to ensure that participants completely read the document or watched the video before they could advance any further. Afterwards, 3 food-ware procurement related questions were provided and followed up with demographic questions. Overall, the survey required an approximate of 5 minutes to complete, and the video and PDF were embedded in the survey, thus participants were not redirected to other websites. Responses to the survey was very low, as the sample size was only 46 when the required minimum for a significant finding was 128 participants.

RESULTS

Overall, the results were inconclusive and did not support the hypothesis that the loss-frame video condition would have the greatest effect size out of the 4 conditions. With these many conditions, it was necessary to have a minimum sample size of 128 participants. Although 118 participants initiated the survey, the majority of them did not complete the survey. The total obtained sample size ($n = 46$) across 4 conditions consisted of gain-frame text ($n=16$), loss-frame text ($n = 10$), gain-frame video ($n = 9$) and loss-frame video ($n = 11$).

A 2-way ANOVA between-subjects analysis was conducted for the 4 conditions. Table 1 shows the results for the containers question. The video conditions had higher means overall: video-gain ($M=0.444$, $SD=0.410$) and video-loss ($M=0.500$, $SD=0.418$) compared to text-gain ($M=0.203$, $SD=0.526$) and text-loss ($M=0.250$, $SD=0.354$). Table 2 shows the results for the cups question. The video conditions had higher means overall: video-gain ($M=0.489$, $SD=0.337$) and video-loss ($M=0.442$, $SD=0.439$) compared to text-gain ($M=0.337$, $SD=0.518$) and text-loss ($M=0.400$, $SD=0.525$). Table 3 shows the results for the containers question. The video conditions had higher means overall: video-gain ($M=0.704$, $SD=0.261$) and video-loss ($M=0.758$, $SD=0.368$) compared to text-gain ($M=0.479$, $SD=0.516$) and text-loss ($M=0.700$, $SD=0.292$). Overall, these results signal that video messages may perform better than text.

To further explore the data, the sum of averages was calculated for each of the 4 conditions (See Table 4). Out of all the conditions, loss-video messages had the greatest mean ($M=1.7$)

compared to gain-video ($M=1.6$), text-loss ($M=1.4$) and text-gain ($M=1.0$). In addition, a 3-way ANOVA was performed to see if there were any interactions between the type of questions. Compared to cups and containers, the cutlery question showed a significant interaction as this question had the greatest overall mean (See Graph 1). This suggests that the type of wording of the question may matter.

In conclusion, the results were unable to support the hypothesis as none of the calculations showed significance due to the small sample size. However, there is some evidence leaning towards the hypothesis that suggests loss-gain framing can influence video or text comprehension, which may be revealed with more data points.

DISCUSSION

Several challenges and limitations affected the results, including a high drop-off rate of 61% and an incorrect target audience. A major limitation was the length of the survey itself. More specifically, there were two key areas that severely impacted participant engagement. First, there was a mandatory waiting period to view the text or video before the participant can enter the survey. This was set in place to give participants enough time to view the material and understand the zero waste guidelines more thoroughly. Participants who may not have clearly read the instructions might have been confused by the inability to advance in the survey thus, it could have motivated them to exit the survey before it could be formally completed. If the study were conducted again a suggested improvement would be to look into effectively balancing the time allocated for participants to view relevant information and to visibly show a timer countdown of the time remaining.

Another challenge of the study was keeping participants engaged as the zero-waste strategy was targeted for a different audience. The zero-waste strategy is intended for UBC food outlet managers and not the student population, which means that the content of both text and video mediums should be modified to accommodate a student participant pool. However, keep in mind that these adjustments do not inherently change who the guidelines are intended for and what the purpose of this zero-waste strategy aims to achieve. One suggestion may be to understand what the document aims to inform the audience, and to be aware of how different audiences may receive the document and what their goals of understanding the material is intended for.

One insight that was observed is the cutlery question obtaining much higher scores compared to the cup and container questions. Upon further review, a possible explanation for this difference is the wording of the question itself and the options available for participants to choose from. The overuse of the word 'cutleries' appeared to easily steer participants to select the correct responses, since the correct answers contained cutleries whereas the incorrect did not. Word choice must be more carefully considered to avoid similar outcomes as the data taken from this specific question seems to have been affected by that limitation. The material used for sustainable cutlery is also easier to guess correctly as it was easy to deduce which materials are reusable, compared to types of materials for cups and containers.

Future replications of this study can also specifically look into other populations where it may be possible to generalize findings to a much larger sample since a focus on food outlet managers is too small in terms of scope. Researching and applying loss-gain framing to other forms

of communication mediums could also provide more insight to its influence in conveying information and testing its comprehension across participants will be necessary as well.

RECOMMENDATIONS

Even though these findings were not significant, there are some areas of improvement based on the data from Qualtrics and participant's feedback. From 113 total participants, 69 did not complete the survey, which means that they started completing the survey but didn't answer all the questions. Based on this observation, the recommendation to the client is to shorten the guidelines in the document and video format. There is evidence that supports that flashcards enhance knowledge retention (Santos-Ferreira et al., 2020), thus we suggest presenting the guidelines in a flashcard style with pictures of the containers that comply with the guidelines. The flashcards could be sent out digitally to the managers as needed.

Additionally, some participants provided feedback and mentioned that they felt that the survey was a memorization task that was measuring retention. Thus, if the guidelines felt like a memorization task, the suggestion is that UBC provides a checklist tool to managers, so they can easily mark the items that they have or will purchase once they become part of the UBC network. In a study by Verweij & Kashiwagi (2016), it was found that introducing an easy-to-use procurement checklist for buyers and vendors significantly improves the correct procurement decisions and correct labelling. Having a checklist would decrease the required memorization cognitive load and will make it easier for managers to purchase and track the items.

Similarly, it's important to explore the underlying motivations that managers may have to follow the guidelines. There could be other reasons to explain why managers are not following the guidelines, as opposed to simply not understanding them. Providing an incentive on behalf of UBC might be an effective way to increase adherence with the guidelines, as it would be mutually beneficial and potentially motivating. Research on motivations for the 'Greening' of industry shows that some of the key motivations from CEOs to follow greener guidelines is the environmental awareness and the economic benefit (Townsend, 1998). Further research is required to assess the motivations for UBC managers specifically and how UBC could provide economic benefits to increase compliance with the guidelines. With regards to the framing effects, more research should be done to assess gender differences, as there is compelling evidence that women are more likely to be influenced than men when exposed to negative framing (Fujimoto & Park, 2010).

REFERENCES

- Buch, S. V., Treschow, F. P., Svendsen, J. B., & Worm, B. S. (2014). Video- or text-based e-learning when teaching clinical procedures? A randomized controlled trial. *Advances in Medical Education and Practice*, 5(default), 257-262. <https://doi.org/10.2147/AMEP.S62473>
- Campus and Community Planning. (2020, 01). *Food Service Ware Procurement Guidelines: Supporting UBC's Zero waste food ware strategy*. <https://planning.ubc.ca/sites/default/files/2020-01/UBC%20Zero%20Waste%20Procurement%20Guideline.pdf>
- Cheng, T., Woon, D. K., & Lynes, J. K. (2011). The use of message framing in the promotion of environmentally sustainable behaviors. *Social Marketing Quarterly*, 17(2), 48-62.
- Fujimoto, H., & Park, E. S. (2010). Framing effects and gender differences in voluntary public goods provision experiments. *The Journal of Socio-Economics*, 39(4), 455-457.
- Grazzini, L., Rodrigo, P., Aiello, G., & Viglia, G. (2018). Loss or gain? The role of message framing in hotel guests' recycling behaviour. *Journal of Sustainable Tourism*, 26(11), 1944-1966.
- Kahneman, D., & Tversky, A. (2013). Prospect theory: An analysis of decision under risk. In *Handbook of the fundamentals of financial decision making: Part I* (pp. 99-127).
- Karpinska-Krakowiak, M., Skowron, Ł., & Ivanov, L. (2020). "I will start saving natural resources, only when you show me the planet as a person in danger": The effects of message framing and anthropomorphism on pro-environmental behaviors that are viewed as effortful. *Sustainability*, 12(14), 5524. [doi:http://dx.doi.org.ezproxy.library.ubc.ca/10.3390/su12145524](http://dx.doi.org.ezproxy.library.ubc.ca/10.3390/su12145524)
- Kerr, J. R., & Wilson, M. S. (2018). Changes in perceived scientific consensus shift beliefs about climate change and GM food safety. *PloS One*, 13(7), e0200295-e0200295. <https://doi.org/10.1371/journal.pone.0200295>
- Li, N., & Su, L. Y. (2018). Message framing and climate change communication: A meta-analytical review. *Journal of Applied Communications*, 102(3), 1. <https://doi.org/10.4148/1051-0834.2189>
- Marx, Sabine M., et al. "Communication and Mental Processes: Experiential and Analytic Processing of Uncertain Climate Information." *Global Environmental Change*, vol. 17, no. 1, 2007, pp. 47-58., doi:10.1016/j.gloenvcha.2006.10.004. Accessed 13 Apr. 2021.

McIlwraith-Black, M. [UBC Campus and Community Planning]. (2021, January 28). Zero Waste food Ware at UBC [Video]. YouTube. <https://www.youtube.com/watch?v=SY1Tx54HKAs>

Merkt, M., Weigand, S., Heier, A., & Schwan, S. (2011). Learning with videos vs. learning with print: The role of interactive features. *Learning and Instruction*, 21(6), 687-704. <https://doi.org/10.1016/j.learninstruc.2011.03.004>

Santos-Ferreira, D., Guimaraes, B., Tsisar, S., Goncalves-Teixeira, P., Ladeiras-Lopes, R., Fontes-Carvalho, R., & Leite-Moreira, A. (2020). The impact of digital flashcards on cardiovascular physiology academic performance in a medical course—a dose-dependent effect between the amount of training and academic success. *European Heart Journal*, 41(Supplement_2), ehaa946-3461.

Townsend, M. (1998). Motivations for the ‘Greening’ of industry - ‘Insider’ views. (1st ed., pp. 76-92). Routledge. <https://doi.org/10.4324/9780429445774-7>

Verweij, J., & Kashiwagi, D. (2016). Introducing the best value quality checklist in procurement. *Journal for the Advancement of Performance Information and Value*, 8(2), 20-20.

Appendix A.

The loss or gain framing before a video or text document of zero waste foodware options

Imagine you are a UBC cafe manager who needs to make procurement decisions (eg. purchasing food packaging containers for the summer) and you are responsible to make sustainable purchasing decisions for UBC's zero waste goals.

- A. You will be watching a 4 minute video on UBC's zero waste food ware strategy. Please watch carefully.
- B. You will be reading a document on UBC's zero waste food ware strategy for 4 minutes. Please read carefully.

Gain:

UBC has invested at least \$20 million dollars on Sustainability programs on campus. If these guidelines are followed properly it would **save million in costs for waste management and help promote more healthy environmental effects.**

Loss:

UBC has invested at least \$20 million dollars on Sustainability programs on campus. If these guidelines are not followed it **decreases the environmental effectiveness** of UBC's solid waste management and makes the whole effort worthless.

Appendix B

Questions:

1. What kind of cups should you buy for your cafe? (select all that apply)

Yes items:

1. recyclable plastic cups type 1
2. recyclable plastic cups type 2
3. recyclable plastic cups type 5

No items:

4. plastic cups type 3
5. plastic cups type 6
6. plastic cups type 7
7. compostable cups
8. foam cups

2. What kind of cutleries should you buy for your cafe? (select all that apply)

Yes items:

1. Wood based cutleries
2. Bamboo based cutleries
3. Plant fibre based cutleries

No items:

4. Recyclable plastics
5. Compostable plastics
6. PLA plastics

3. What kind of containers should you buy for your cafe? (select all that apply)

Yes items:

1. Plain containers
2. Uncoated containers
3. Certified compostable containers
4. Reusable containers

No items:

5. Compostable plastic containers
6. biodegradable plastic containers,
7. conventional plastic containers
8. styrofoam containers

What is your age?

- a. 12-17 years old.
- b. 18-24 years old.
- c. 25-34 years old.
- d. 35-44 years old.
- e. 45-54 years old.
- f. 55-64 years old.
- g. 65-74 years old.

What is your gender identity?

- a. Woman
- b. Man
- c. Transgender
- d. Non-binary/non-conforming

- e. Other: _____
- f. Prefer not to respond

What is your ethnicity?

- a. Caucasian
- b. African American
- c. Latino or Hispanic
- d. Asian
- e. Native American
- f. Other: _____
- g. Prefer not to respond

Appendix C. PDF Images of “Food Service Ware Procurement Guideline” used in the survey text conditions

5 | UBC FOOD SERVICE WARE PROCUREMENT GUIDELINE

Hot Drink Cups, Lids, Stir Sticks

Required

Required Fee* ✔ Accepted ✘ Not Accepted

2020 - \$0.25 per cup
2021 - TBD & no self-serve cups

Paper cup with plastic lining; plastic lid (recyclable preferred) Plain wood stir sticks Foam cups; plastic stir sticks

More Information

- Staff must be trained to ask each customer if they would like to purchase a cup, before offering one.
- Select white or natural paper cups with minimal dyes and inks to maximize recyclability.
- At UBC, cups and drink containers go in the Recyclable Containers bins. Any certified compostable cups placed in those bins will be sent to the recycling facility along with regular cups, rather than composted - therefore not achieving the intent.
- Self-serve single use cups are not accepted as this undermines the purpose of the fee.
- Customers must be charged the cup fee separately from the product (e.g., coffee), and staff must be trained to ask each customer if they would like to purchase a cup instead of automatically including it. Alternate options: 1. don't provide single use cups; 2. by implementing other actions, clearly demonstrate that the reduction target is being met.

Optional

Additional actions to reduce single use items

- Increase fee beyond minimum, and/or combine the fee with a reusable cup discount (e.g., \$0.25 fee plus additional discount for bring your own mug).
- Encourage/transition toward more in-house consumption using reusable (e.g., ceramic) cups.
- Offer reusable cups for sale.
- Participate in a cup sharing program if available, or create a cup return program.
- Offer express line, priority or loyalty cards for customers with reusable mugs.

6 | UBC FOOD SERVICE WARE PROCUREMENT GUIDELINE

Cold Drink Cups and Lids

Required

Required Fee* ✔ Accepted ✘ Not Accepted

2020 - N/A
2021 - TBD

Recyclable plastic cup Recyclable plastic lid Foam cups, plastic cups, compostable cups

More Information

- Preferred plastic type for recyclability is #1 (PETE), followed by #5 and #2. Types #3, #6 and #7 should be avoided.
- At UBC, cups and drink containers go in the Recyclable Containers bins, so compostable cups will be sent to the recycling facility rather than composted.
- A fee may be added in 2021, this will be determined with consultation.

Optional

Additional actions to reduce single use items

- Offer reusable cups for use in-house or for sale.
- Participate in a cup share program if available.
- Offer express line or priority for clients with reusable cups.

7 | UBC FOOD SERVICE WARE PROCUREMENT GUIDELINE

Straws

Required

Required Fee ✔ Accepted ✘ Not Accepted

N/A

Paper or cardboard straws Plastic straws*

More Information

- Plastic straws are not readily recyclable, can contaminate food scraps composting, and escape into the environment causing ocean pollution. Proven alternatives are available and have been in use on UBC campus since summer 2018.
- Bubble Tea straws must meet the requirements here once alternative solutions are available.
- * Bendable straws (plastic if necessary) to be provided to customers who need them as an adaptive aid for accessibility.

Optional

Additional actions to reduce single use items

- Do not offer straws of any kind unless requested for accessibility reasons.
- Reusable options such as silicone, glass, or metal may also be sold.

8 | UBC FOOD SERVICE WARE PROCUREMENT GUIDELINE

Utensils/Cutlery

Required

Required Fee ✔ Accepted ✘ Not Accepted

2020 - N/A
2021 - \$0.10 per piece

No self-serve single use cutlery starting 2020

Compostable wood or plant fibre-based Plastic (including recyclable, compostable and PLA)

More Information

- Plastic cutlery is one of the most common contaminants in food scraps composting, causing food scraps to be sent to the landfill and creating plastic contamination in compost that is used for landscaping and gardening.
- Compostable wood and bamboo cutlery have been in wide use at UBC since summer 2018.
- Compostable plastic cutlery is not able to be composted by UBC and many regional facilities, and is also not recyclable.
- Only supply single use cutlery on request, (no self-serve).

Optional

Additional actions to reduce single-use items

- Only supply single use cutlery on request (no self-serve)
- Offer reusable cutlery when possible.

9 | UBC FOOD SERVICE WARE PROCUREMENT GUIDELINE

Food Containers/Clamshells

Required

Required Fee ✔ Accepted ✘ Not Accepted

2020 - N/A
2021 - \$0.50 *

Plain paper/fibre or certified compostable paper/fibre with coating Foam, plastic ** Conventional, non-compostable plastic coated paper/cardboard; paper/cardboard with plastic window

More Information

- Plastic (recyclable or compostable plastic) single use food containers are a major source of contamination in food scraps composting, as customers who wish to compost their food waste often place the plastic container with food inside in the green bin. However there is no process to separate the container from the food after this point.
- Compostable containers made of plant fibre (e.g., paper and cardboard), uncoated or with compostable plastic coatings for water and grease resistance, are acceptable and readily available. If coated, they must be certified compostable.
- Avoid coloured paper and fibre due to the dyes and ink, natural or white is best.
- * Fee to be confirmed informed by consultation.
- ** For "grab and go" pre-packaged food items, these may be plastic if feasible alternatives are not available. In this case, preferred plastic types for recyclability are #1, #5 and #2. Types #6 and #7 and black plastic should be avoided.

Optional

Additional actions to reduce single use items

- Provide reusable plates and containers for use in-house. This is recommended for the longer term to transition away from single use containers.
- Charge a fee in Year 1 of at least \$0.50 for single use food containers with active communication.
- Operate or participate in a reusable container exchange program.

10 | UBC FOOD SERVICE WARE PROCUREMENT GUIDELINE

Plates and Bowls

Required

Required Fee ✔ Accepted ✘ Not Accepted

2020 - N/A
2021 - \$0.50 *

Plain, uncoated paper/ fibre plate or container Paper/fibre-based certified compostable bowl Foam, plastic bowls and plates

More Information

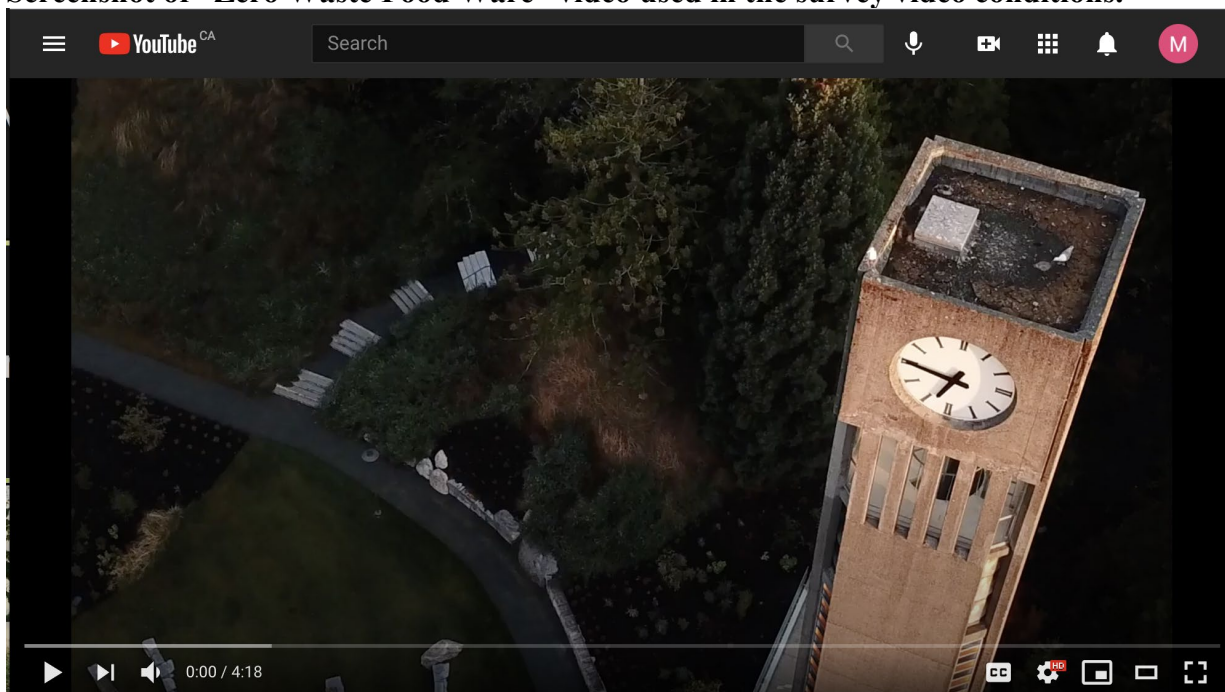
- Plastic (non-compostable or compostable plastic) single use food containers, plates and lids are a major source of contamination in food scraps composting.
- Plates and bowls made of plant fibre (e.g., paper), uncoated or with compostable plastic coatings for water/grease resistance, are acceptable and readily available. If coated, they must be certified compostable.
- Compostable fibre-based lids are preferred, if feasible. Otherwise, choose recyclable plastic, as compostable plastic is not compatible with UBC waste systems.
- Avoid coloured paper and fibre due to the dyes, white or natural is best.
- * Fee to be confirmed informed by consultation.

Optional

Additional actions to reduce single use items

- Provide reusable plates and containers for use in-house. This is recommended for the longer term to transition away from single use containers.
- Charge a fee in Year 1 of at least \$0.50 for single use food containers with active communication.
- Operate or participate in a reusable container exchange program.

Appendix D.
Screenshot of “Zero Waste Food Ware” video used in the survey video conditions.



11 | USC FOOD SERVICE WARE PROCUREMENT GUIDELINE

Wrappers

Required

Required Fee	✓ Preferred	✗ Not Accepted
N/A		
	Plain, uncoated paper; or certified compostable coated paper	Paper with conventional plastic coating; plastic wrappers* Foil*

More Information

- If paper is coated for grease or liquid resistance, it must be certified compostable. Natural colour is preferred, so that it looks different than most conventional plastic coated paper.
- Use plain paper sleeves or small paper bags instead of plastic wrap if feasible.
- * Plastic or foil may be used in cases where there is no compostable alternative that is available.

Optional

Additional actions to reduce single use items

- Serve food on a reusable plate rather than wrapping, if possible.

12

Bags

Required

Required Fee*	✓ Accepted	✗ Not Accepted
2020 - \$0.15 2021 - TBD		
	Paper bags	Plastic bags (including compostable or biodegradable) Paper bags with plastic windows

More Information

- Plastic bags escape into the environment easily and are a major source of ocean pollution, and are a major contaminant in food scraps composting.
- Alternatives include reusable bags and paper bags.
- For bags requiring fees, staff must be trained to ask each customer if they would like to purchase a bag, before offering one.
- * The fee applies to single use carry bags including paper, or plastic of any kind. Small bags for individual items such as pastries or cookies do not require a fee. Also, staff must be trained to ask each customer if they would like to purchase a bag, before offering one.

Optional

Additional actions to reduce single use items

- Offer branded, reusable bags for sale and market these to customers.
- Offer a bag exchange program.

Appendix E.
Table 1.
Descriptive statistics for containers.

Descriptives – Containers

text/video	gain/loss	Mean	SD	N
Text	Gain	0.203	0.526	16
	Loss	0.250	0.354	10
Video	Gain	0.444	0.410	9
	Loss	0.500	0.418	11

Table 2.
Descriptive statistics for cups.

Descriptives – Cups

text/video	gain/loss	Mean	SD	N
Text	Gain	0.337	0.518	16
	Loss	0.400	0.525	10
Video	Gain	0.489	0.337	9
	Loss	0.442	0.439	11

Table 3.
Descriptive statistics for cutleries.

Descriptives – Cutleries

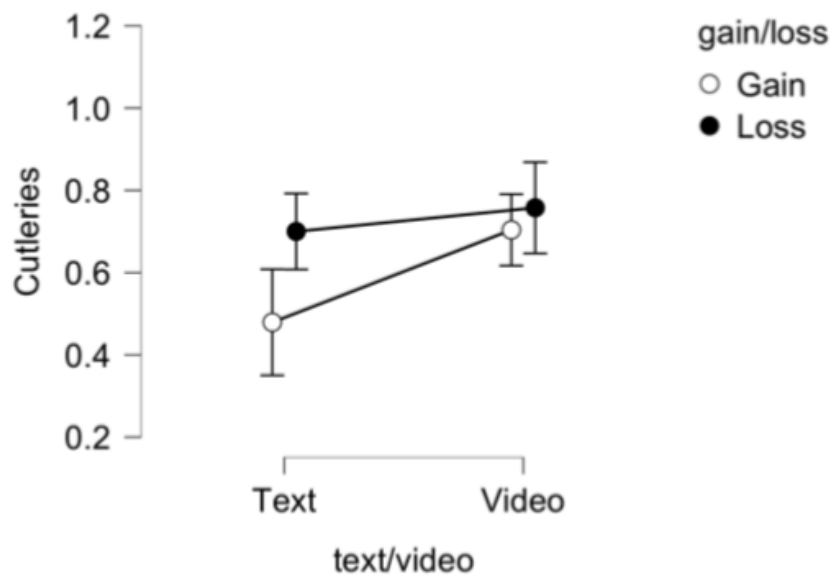
text/video	gain/loss	Mean	SD	N
Text	Gain	0.479	0.516	16
	Loss	0.700	0.292	10
Video	Gain	0.704	0.261	9
	Loss	0.758	0.368	11

Table 4.
Sum of overall mean for each condition

Conditions	Mean
Text Gain	1.0
Text loss	1.4
Video Gain	1.6
Video Loss	1.7

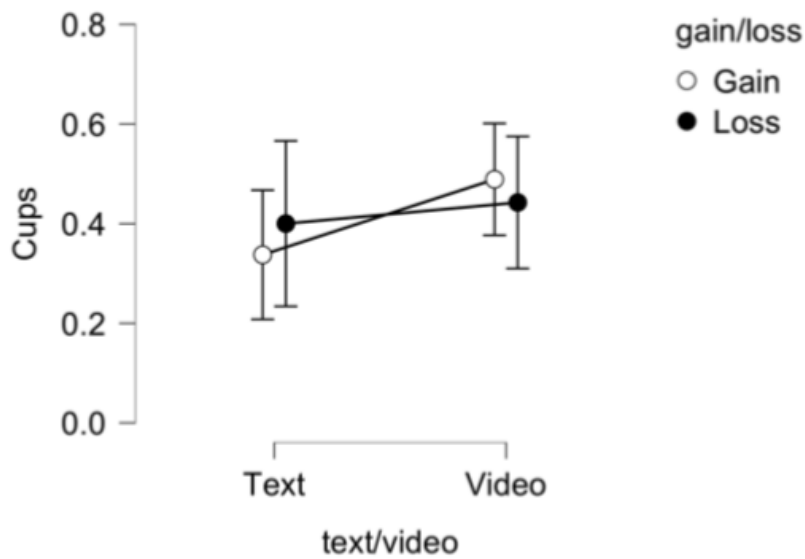
Graph 1.

Descriptive plot for cutleries.



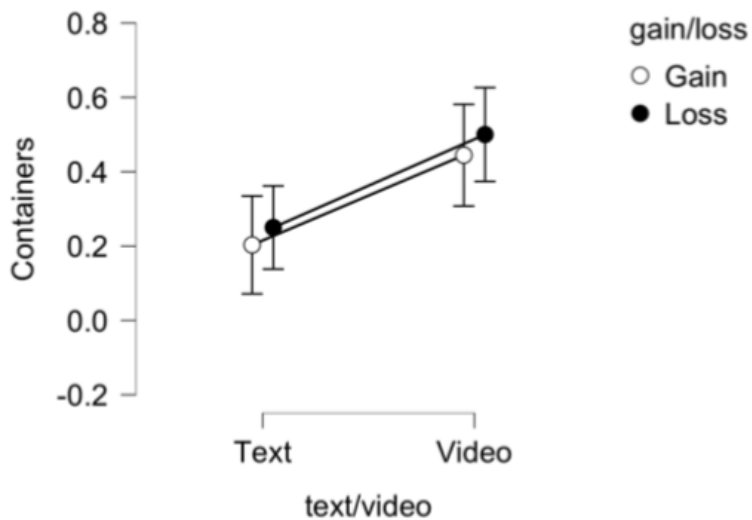
Graph 2.

Descriptive plot for cups.



Graph 3.
Descriptive plot for containers.

Descriptives plots



Relationship with Client:

Overall, it was a pleasure to work with our client, as they provided guidance and support from the beginning of our research. The request from our client was very specific, thus we were unable to

conduct our ideal research, which was one of the challenges that we faced as we had to change our research question after submitting our proposal. Additionally, we were unable to get the managers (who were our target) to participate in our study, which limited our findings.

Team Work:

Throughout the term we worked as a team by meeting multiple times per week and working collaboratively to meet the deadlines. In general terms, we all worked on everything and contributed equally to our final presentation and final report. For the proposal and the presentation, we all met and worked in conjunction to put it together. For the final report, Manuela was in charge of Qualtrics, as she was managing the survey's responses. Peijia focused on Jasp and helped a lot with statistical analysis. Brian, Amir and Valeria supported Manuela and Peijia where needed. Everyone worked collaboratively on the presentation, recommendations and discussion in order to ensure seamless group work. We think our teamwork was excellent, as we were all committed to do our best in this research project. We didn't have any challenges working as a team and we are glad that we worked together this term.