



LIVING LAB

2021 Annual Report

Prepared by

Christopher Bryant, PhD

Bryant Research Ltd

Prepared for

Educated Choices Program

December 2021

Executive summary

Since our 2020 report, the evidence showing the impact of education interventions on animal product consumption has grown, including several peer-reviewed publications using real food outcomes. The Educated Choices Program continues to be one of the leading organizations delivering this proven intervention at a large scale.

Our vast and ongoing data collection and analyses can provide further insights into the ways of maximizing the impact of education interventions for reducing animal product consumption. The following recommendations are based on data from 12,513 student survey responses.

1. For presentations overall:

- a. Presentations positively influence students' intended and self-reported diets.
- b. Health, animals, and the environment are the most important motivators.
- c. Taste and family diets are the most important barriers, but their importance is declining over time.
- d. The most frequently-mentioned theme was animals.

2. To optimize content delivery:

- a. Healthful Eating and Ethics of Eating are the most effective presentations for inspiring change; Future of Food is least effective.
- b. In-person presentations achieve about 10% more change than online videos.

3. To target the most promising students:

- a. Females, older students, and those in science classes are most open to change.
- b. More change is achieved in lower-income and more conservative towns, but less is achieved in more agricultural states.

As we continue to monitor trends in survey data through the Living Lab, we will also expand our analyses to include follow-up surveys, control group comparisons, email outreach experiments, and experiments using actual food outcomes.

Contents

Executive summary	2
Contents	3
1. Background	4
2. Materials & Methods	6
3. Presentation Impact	8
3.1. Overall impact	8
3.2. Motivators, barriers, & memorable moments	10
3.3. Most impactful presentations & delivery methods	13
3.4. Most receptive demographics & communities	15
4. Concluding Remarks	19
4.1. Recommendations	19
4.2. Limitations	19
4.3. Future plans	19
References	21
Appendices	22
Appendix A: Survey Instrument	22
Appendix B: Future Analyses Under Construction	28
B.1. Email subject line experiments	28
B.2. Treatment vs. Control	29
B.3. Follow up Surveys	30

1. Background

The Educated Choices Program (ECP) is a US-based non-profit which aims to reduce animal product consumption (APC) by delivering educational presentations on the benefits of plant-based eating. The organisation designs and delivers engaging and science-based presentations to educate students at middle schools, high schools, and colleges about the impact of their food choices. ECP operates primarily in the US and Canada, and has recently expanded its coverage to Germany. In-class presentations are delivered by professional trained educators, and as of 2020, presentations are also offered as pre-recorded videos accessible online. Different presentations are offered (see Table 1) and teachers select which presentation their students will see.

Table 1: The different presentations offered by the Educated Choices Program.

Presentation name	Abbreviation	Content
Healthful Eating	HE	Focuses on the health impact of animal and plant foods.
Modern Animal Agriculture	MAA	Focuses on the treatment of animals within agriculture.
The Environment and Modern Agriculture	EMA	Focuses on the environmental impact of animal agriculture.
The Ethics of Eating	EOE	A balanced presentation on the health, ethical, and environmental considerations of animal products.
The Future of Food	CM	Focuses on future food technologies including plant-based and cultivated meat.

Since our previous evaluation of ECP's program (Bryant & Dillard, 2020), the **evidence on the efficacy of classroom teaching for reducing APC** has grown substantially (see Table 2).

Table 2: Recent published studies generally support the impact of educational interventions to reduce animal product consumption.

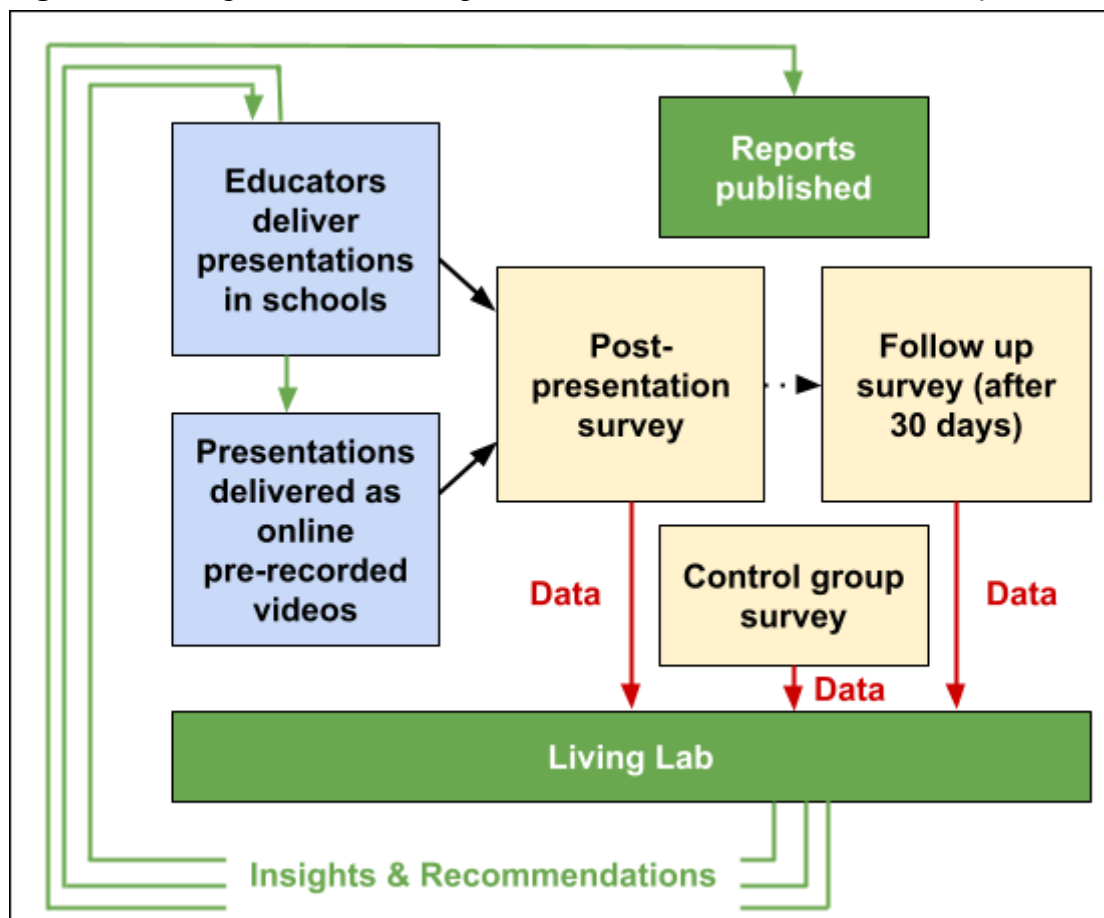
Study	Major Findings
Schwitzgebel, Cokelet & Singer (2020)	Students who engaged with an article, a video, and a classroom discussion on the ethics of eating meat were more likely to agree that eating meat from factory farmed animals is unethical (43%) compared to a control group (29%). Food purchase receipts indicated that the students in the intervention reduced their purchase of meat products (from 52% of purchases before the intervention to 45% after) while the control group showed no change (52% before and after).

Study	Major Findings
Jalil, Tasoff, & Bustamante (2020)	Students who engaged with a 50 minute lecture on food choices and the climate, and additional information on the health benefits of plant-based eating reduced their consumption of meat and increased their consumption of plant foods compared to a control group. The <u>probability of students in the intervention group purchasing meat meals fell by 4.6pp</u> , while the <u>probability of purchasing a plant-based meal increased by 4.2pp</u> .
Schwitzgebel, Cokelet & Singer (2021)	Building on their earlier study, this work had all students read a book chapter arguing for vegetarianism, and half of them also watch a veg advocacy video containing factory farm footage. They found that both interventions <u>increased agreement that eating the meat of factory farmed animals is unethical</u> (from 37% agreement before to 54% after) and resulted in 39% of students anonymously pleading to avoid eating factory farmed meat for 24 hours. Crucially, <u>meat consumption remained constant in a comparison group, but fell in both intervention groups (from 30% of all purchases to 23%)</u> and the effect may have been larger for the students who saw the factory farming footage.
Mathur, Peacock, Robinson & Gardner (2021)	A documentary presenting animal, health, and environmental arguments against meat <u>increased intentions to reduce consumption</u> , but follow-up surveys using 'naive recruiting' to attenuate social desirability bias found <u>no significant difference in overall self-reported consumption</u> compared to control groups.

This new evidence supporting the efficacy of educational interventions for reducing APC is encouraging. However, as Schitzgebel, Cokelet & Singer (2021) argue, it remains unclear which specific aspects of the intervention caused behavioural change. In other words, **there is now good evidence that educational interventions are effective overall, but there is still a lot we do not know about how to optimize them.**

In this context, the Educated Choices Program has launched the Living Lab. The Living Lab comprises a set of smart surveys, control and follow-up surveys (see Figure 1). The smart surveys automatically track the presentation version a student has seen, increasing the validity and accuracy of our analyses. Including control and follow-up surveys in the future will ensure the robustness and validity of our findings.

Figure 1: A diagram of the Living Lab and how it interacts with other parts of ECP.



Our overall aim in the Living Lab is to measure, analyze, report, and optimize the impact of ECP’s presentations on students’ animal product consumption.

2. Materials & Methods

After viewing an ECP presentation, students are invited to take a **survey** about the presentation, their current diets, and their intended future diets. After at least 30 days, those who are eligible (i.e. over 18 and gave their consent and valid email addresses) are contacted for a **follow-up survey**, in which they are asked about their current diets and other behaviours. The **control group** took the survey before viewing the presentation (i.e. their intended diets reflect those of someone who has not seen the intervention).

First, respondents read information about the study and give their consent to take part. They answer questions about **themselves**, including age, grade, gender, current diet, and information about their school (town, state, etc.)

On the next page, respondents answer questions about **their dietary intentions**, including dietary category (meat-eater, meat-reducer, fish-eater, meat-free, or plant-based) and their planned consumption of specific animal foods/alternatives.

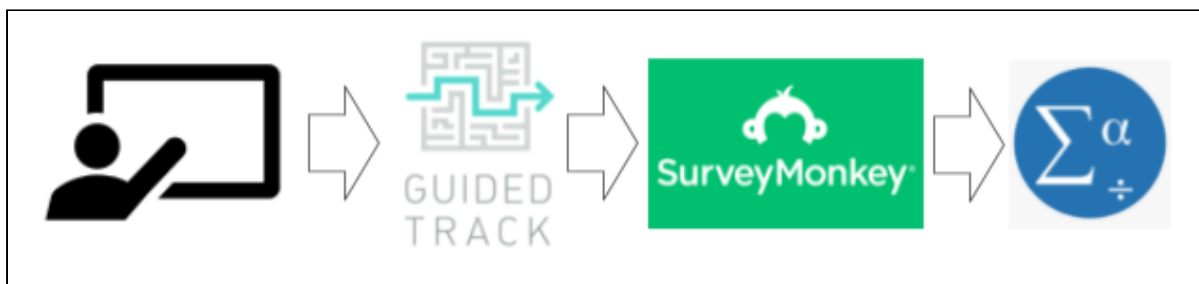
They also choose from a list of motivators and barriers that they consider important, and how much control they feel they have over their diet.

Next, respondents answer questions about **cultivated meat**, including their likelihood of consuming it and their major motivators/barriers.

The final set of questions is **about ECP**: whether respondents have previously seen an ECP presentation, what class they saw the presentation in, and their agreement with various statements about the quality of the presentation. They also answer an open text question about what they found most memorable, and finally they are debriefed and invited to give their email address for a follow-up survey. The full survey instruments can be found in the report Appendices.

The original ECP survey has been rebuilt for the Living Lab to add questions recommended by the animal advocacy research community, to reflect best practice for survey question design, and to incorporate smart elements like automatically recording the presentation version and delivery method a participant has seen using a Presentation PIN.

Figure 2: How data is processed from presentation to report.



After viewing the presentation, students follow links or QR codes to GuidedTrack. Each link or QR code contains a unique Presentation PIN, which indicates the version of the presentation the student has seen. From there, they are filtered into different versions of the survey, hosted on SurveyMonkey. The data is then downloaded and analysed using SPSS.

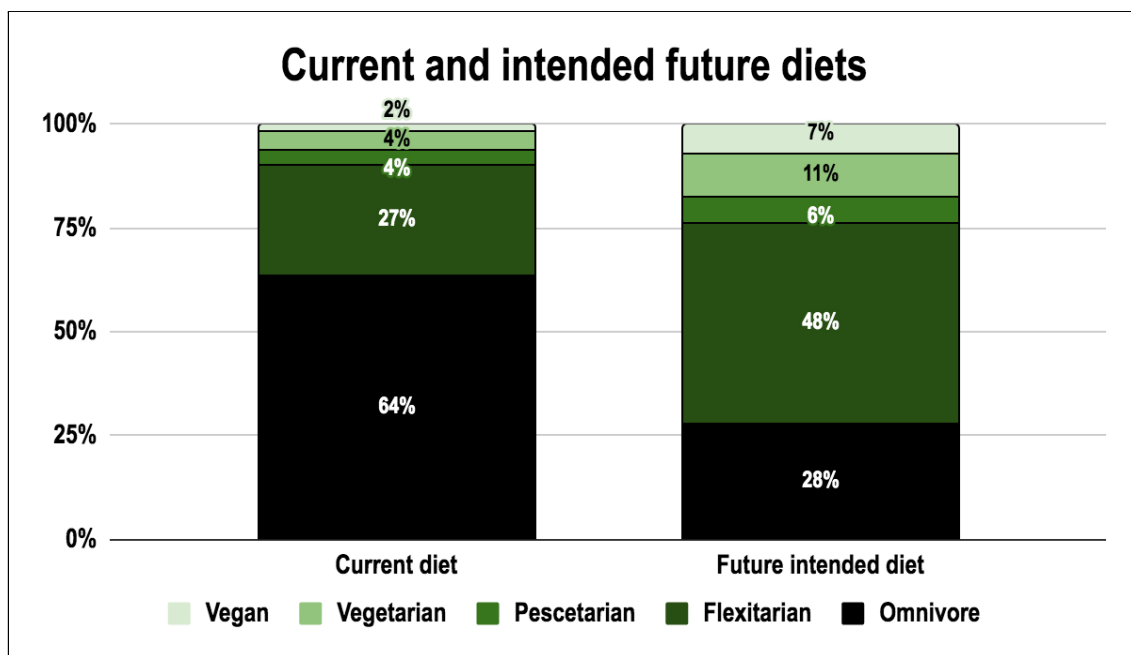
Our main outcome measure of interest is the **percentage of students who intend to make a positive change to their diets** (i.e. to categorically change diet from omnivore to flexitarian, pescetarian, vegetarian, or vegan). The follow up survey also enables us to analyse students' **self-reported consumption** after the presentation.

3. Presentation Impact

3.1. Overall impact

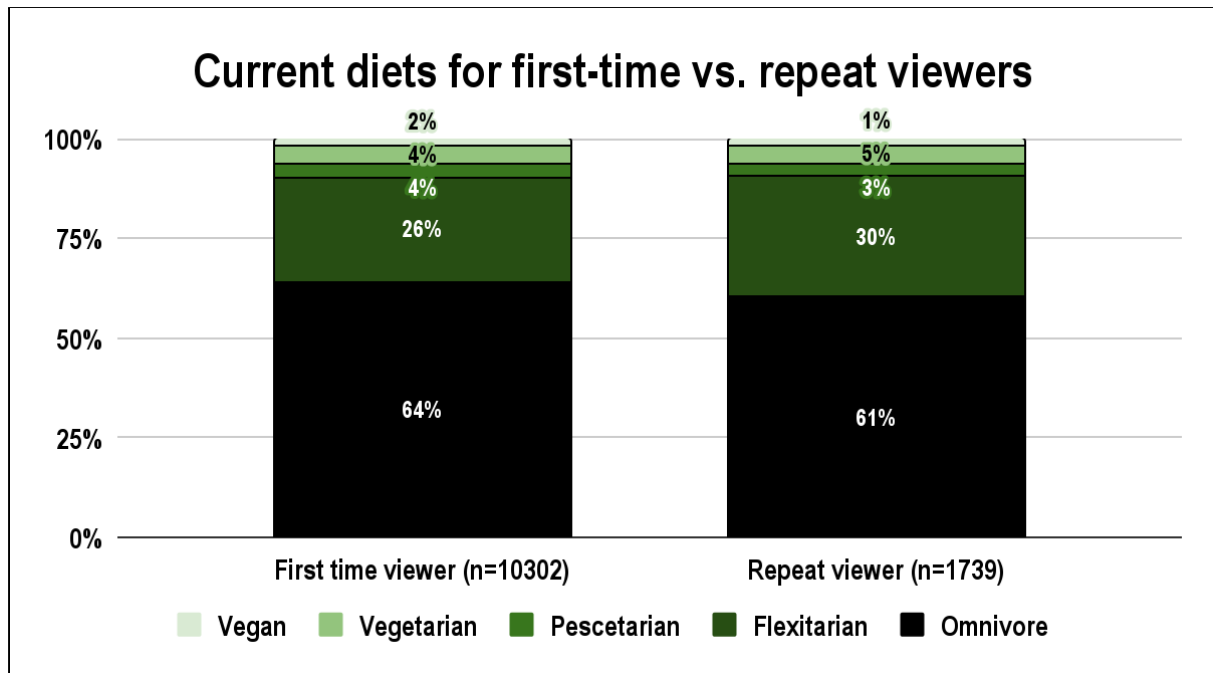
A. ECP presentations influence students' dietary intentions and self-reported diets towards plant-based diets

As shown, students' future intended diets are very different from their self-reported current diets at the time of seeing the presentation.

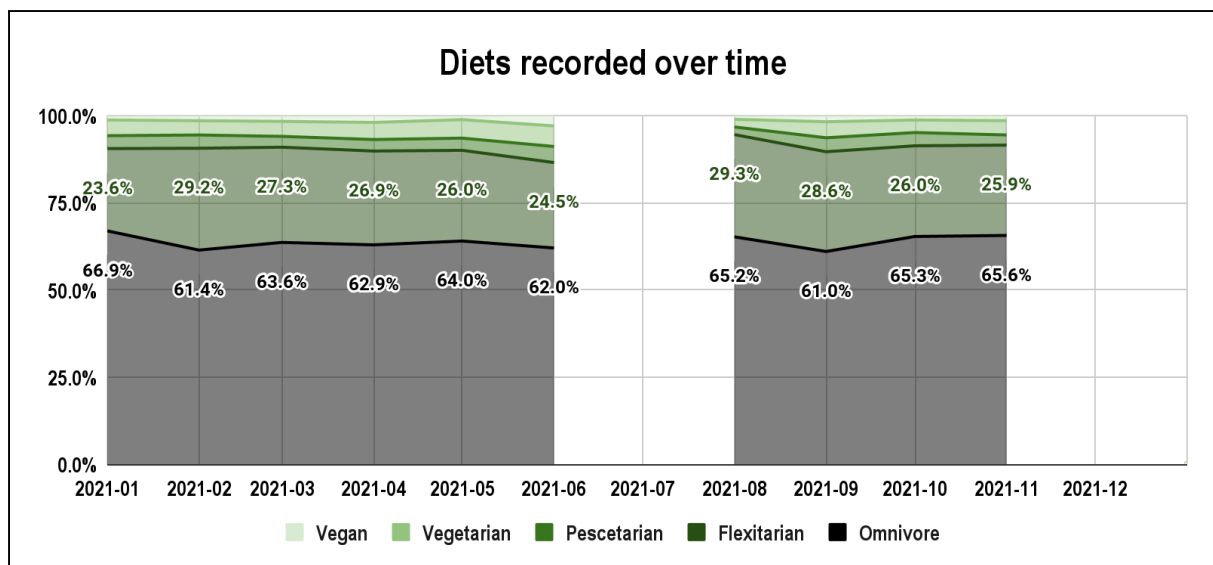


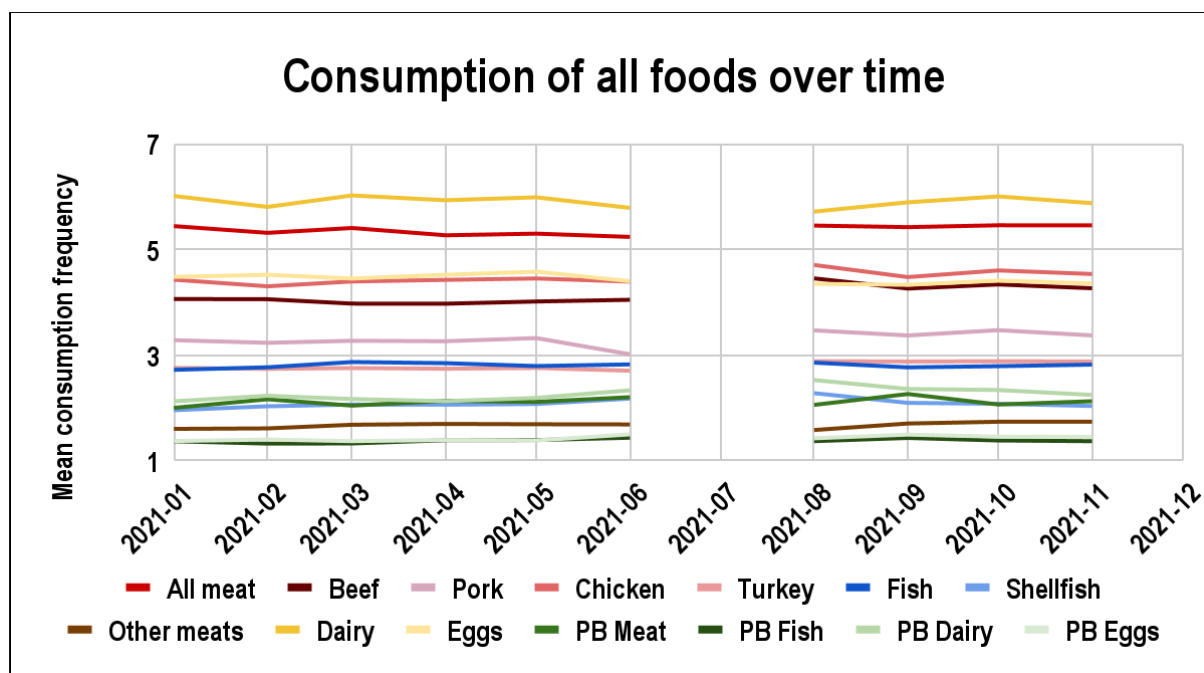
At the time of seeing the presentation, 64% of students identified as meat-eaters, 27% identified as meat-reducers, and 10% claimed to follow meat-free diets. After viewing the presentation, 28% of students intended to be meat-eaters, 48% intended to be meat-reducers, and 24% intended to follow meat-free diets. **This indicates a substantial shift in dietary intentions.** A chi square analysis indicated that this was a significant difference ($\chi^2(4)=6850.77$, $p<0.001$ | $V=0.550$).

We also compared the self-reported current diets of students who had seen an ECP presentation before vs. those who had not. As shown, the proportion of students following a meat-free diet was roughly the same (9.4% for first-time viewers vs. 9.2% for repeat viewers), but **the proportion of meat-reducers was significantly higher amongst repeat viewers (30.2%) compared to first-time viewers (26.1%), while the proportion of meat-eaters was significantly lower among repeat viewers (60.6%) compared to first-time viewers (64.6%)**. A chi square analysis indicates that this was a significant difference ($\chi^2(4)=14.432$, $p=0.006$ | $V=0.035$).



The percentage of students identifying as meat-eaters was between 61-67%, while flexitarians were 24-29% throughout the year. We also see that consumption of specific foods was fairly steady over the year.



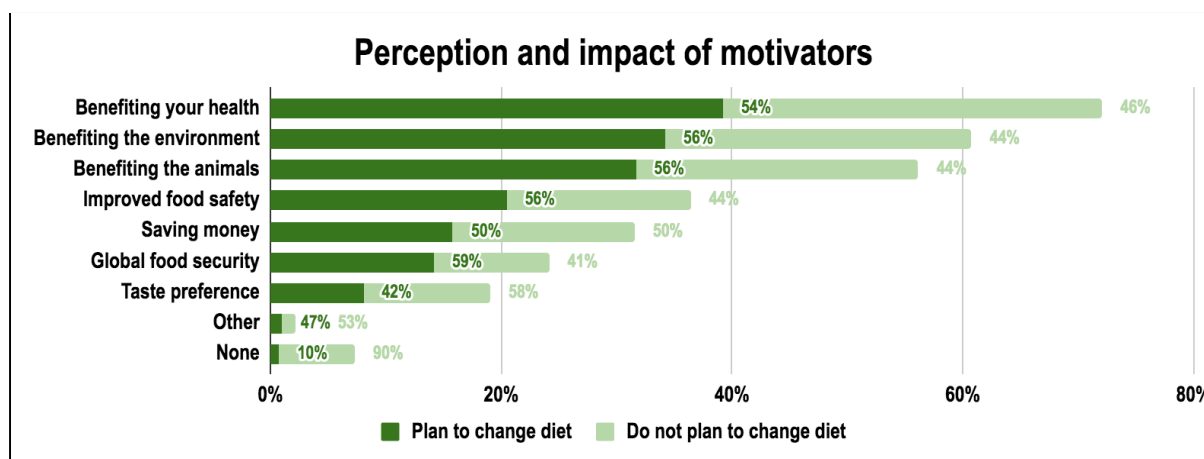


Monitoring this data provides a valuable resource for those tracking diets and animal product consumption over time, and can help us to chart long-term changes in diet.

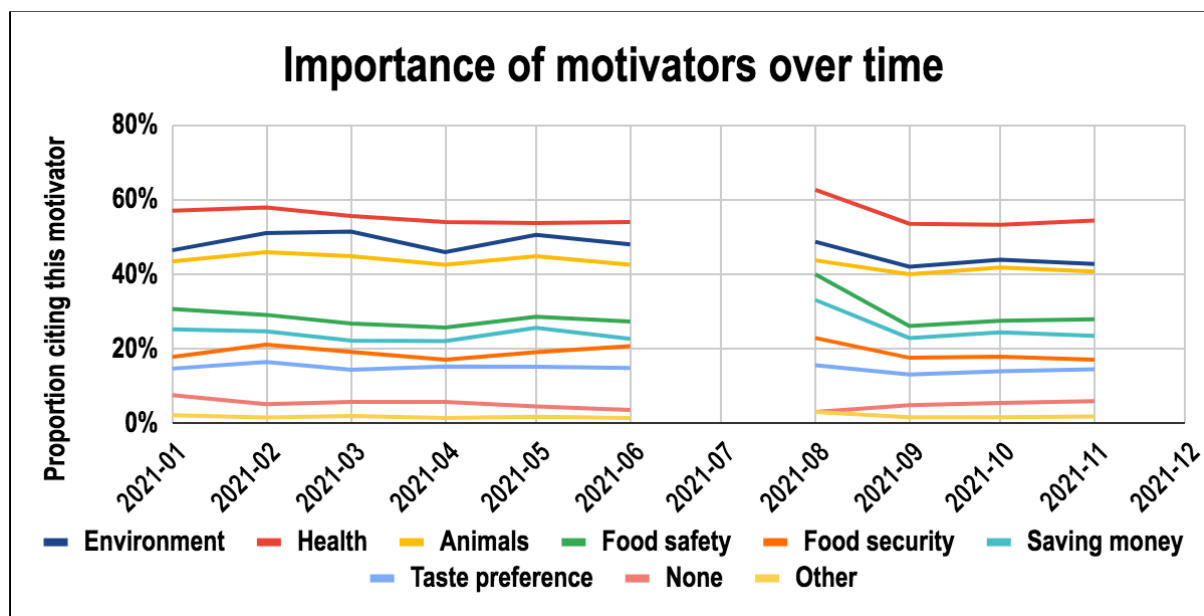
3.2. Motivators, barriers, & memorable moments

B. Health, the environment, and animals are the most important motivators for dietary change

As shown here, the most cited benefits by those who plan to change their diets are **health benefits (38%)** thought this was important and intended to change their diet), closely followed by **environmental benefits (34%)** and **benefits to animals (31%)**. These three major motivators accounted for far more dietary change than other motivators like food safety and saving money.

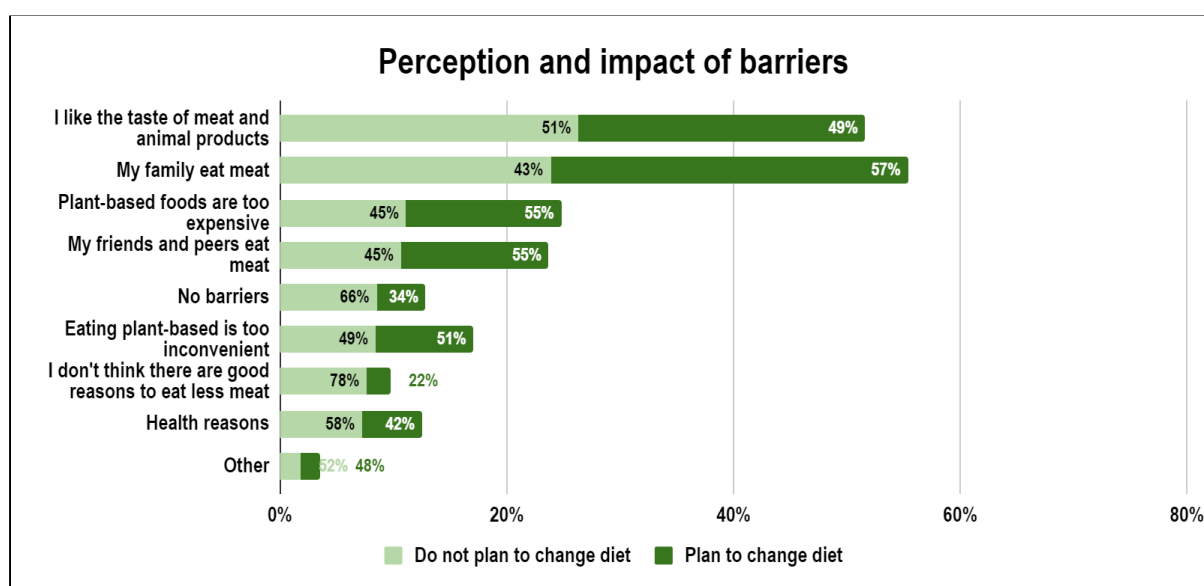


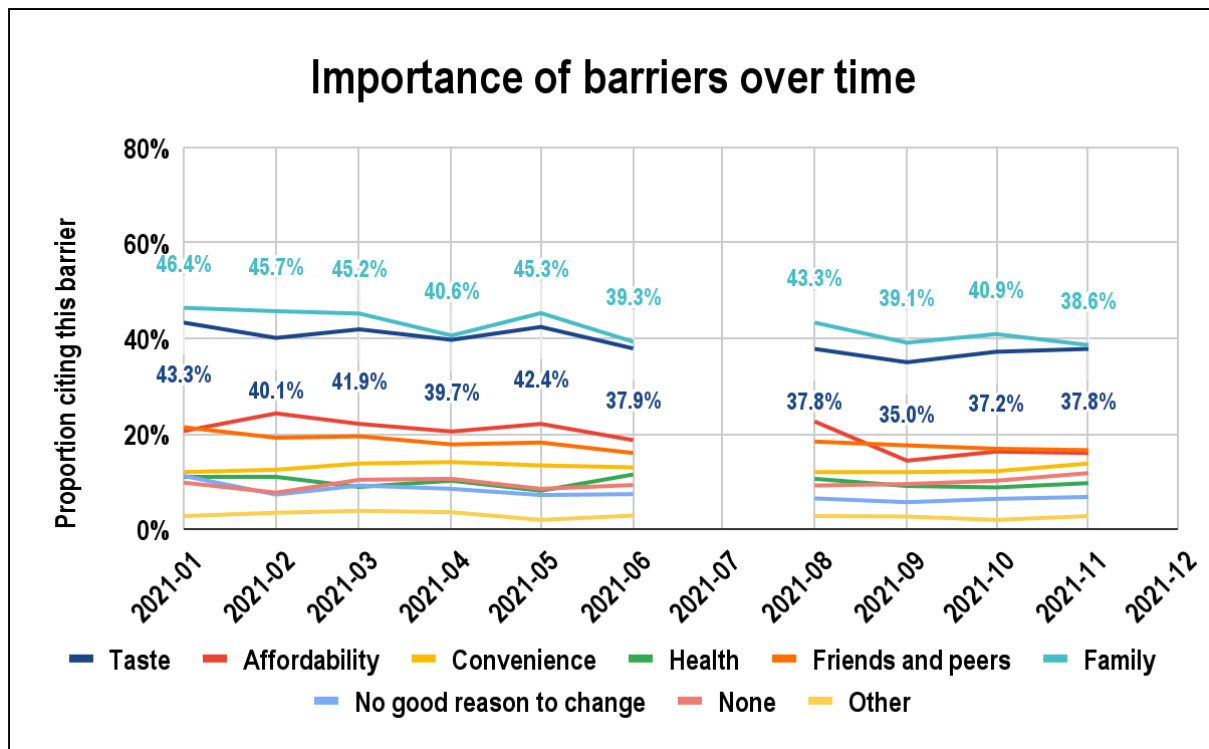
This is likely to be reflective of the content of the presentations seen, the plurality of which are Healthful Eating, with others focusing mainly on environmental and ethical arguments. Looking at these motivators over time, it seems that the relative importance of each is quite stable. We do not observe a change in the order of motivators, but monitoring this data will allow us to observe the impact of future events, e.g. new documentaries focused on any issue in particular.



C. Taste and family diets are the most important barriers to dietary change, but their importance may be declining

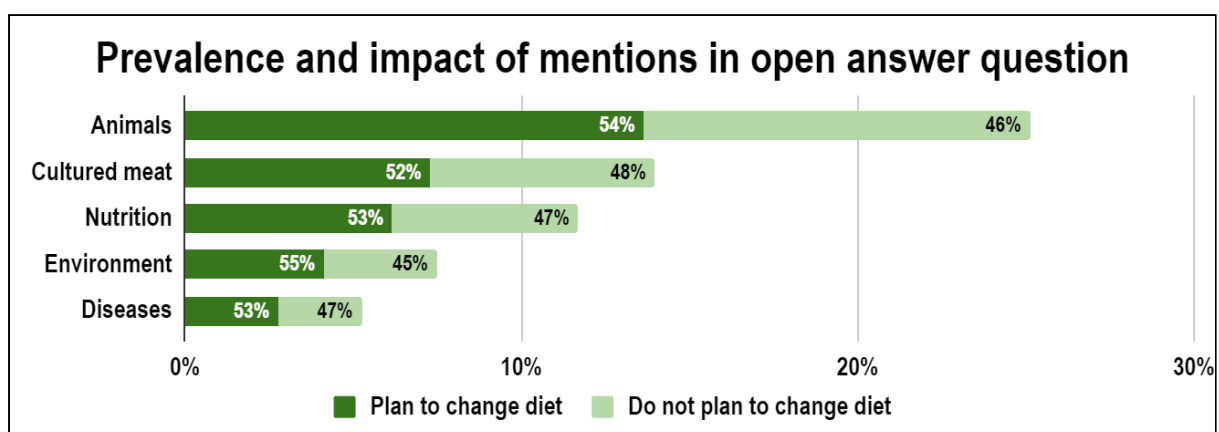
We can also see that the two most important barriers were **liking the taste of meat** (25% thought this was important and did not intend to change their diet) and their **family eating meat** (23%).





Encouragingly, the importance of these two major barriers **appears to be declining over time**. We can see a steady decline in the percentage of students citing both of these major barriers, which could reflect the improving quality of alternatives meaning less of a taste sacrifice, and the increasing prevalence of plant-based eating including among students' families. The number of students citing taste as a barrier fell 6 percentage points over the year, while the number of students citing family as a barrier fell 8 percentage points.

D. The most frequently-mentioned theme was animals

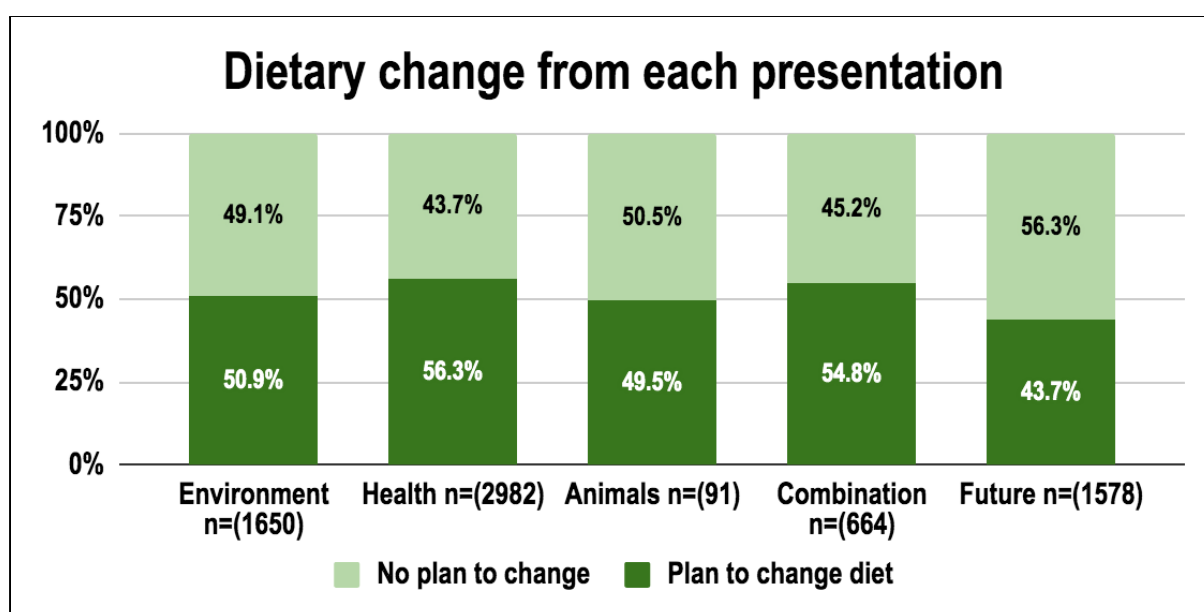


Animals were by far the most frequently-mentioned theme in the open answer section, and was the theme associated with the most participants intending to change their diets (13% of all participants).

3.3. Most impactful presentations & delivery methods

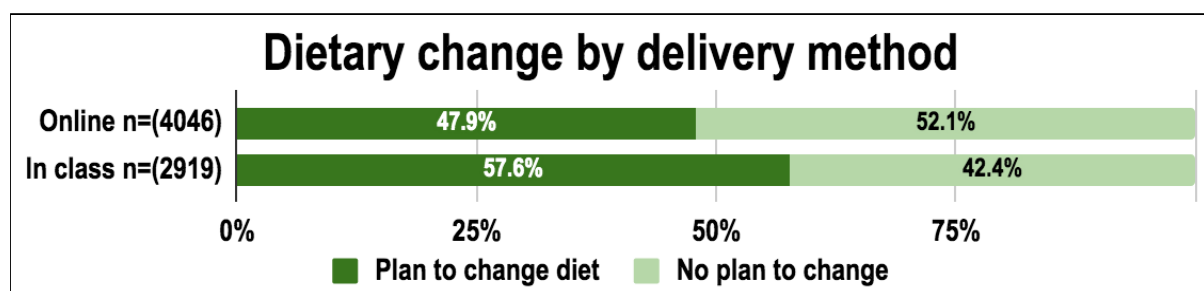
E. Healthful Eating and Ethics of Eating are associated with the most dietary change, while Future of Food is associated with the least

As shown, the five different presentations lead to substantially different rates of intended dietary change. **The most impactful presentation here is Healthful Eating**, which was associated with 56.3% of students intending to change their diet, while **Future of Food was the least impactful**, associated with just 43.7% of students intending to change their diet. A chi square analysis indicates that the differences here were significant ($\chi^2(4)=69.550, p<0.001 \mid V=0.100$).

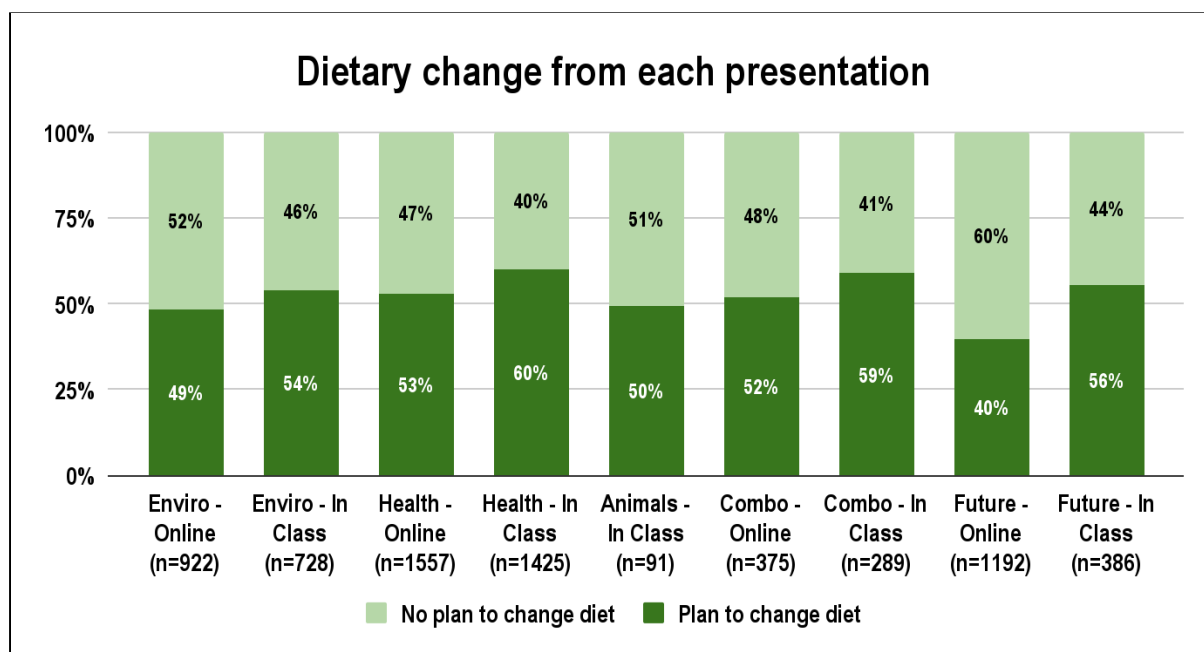


F. In-class presentations achieve about 10% more dietary change compared to online videos

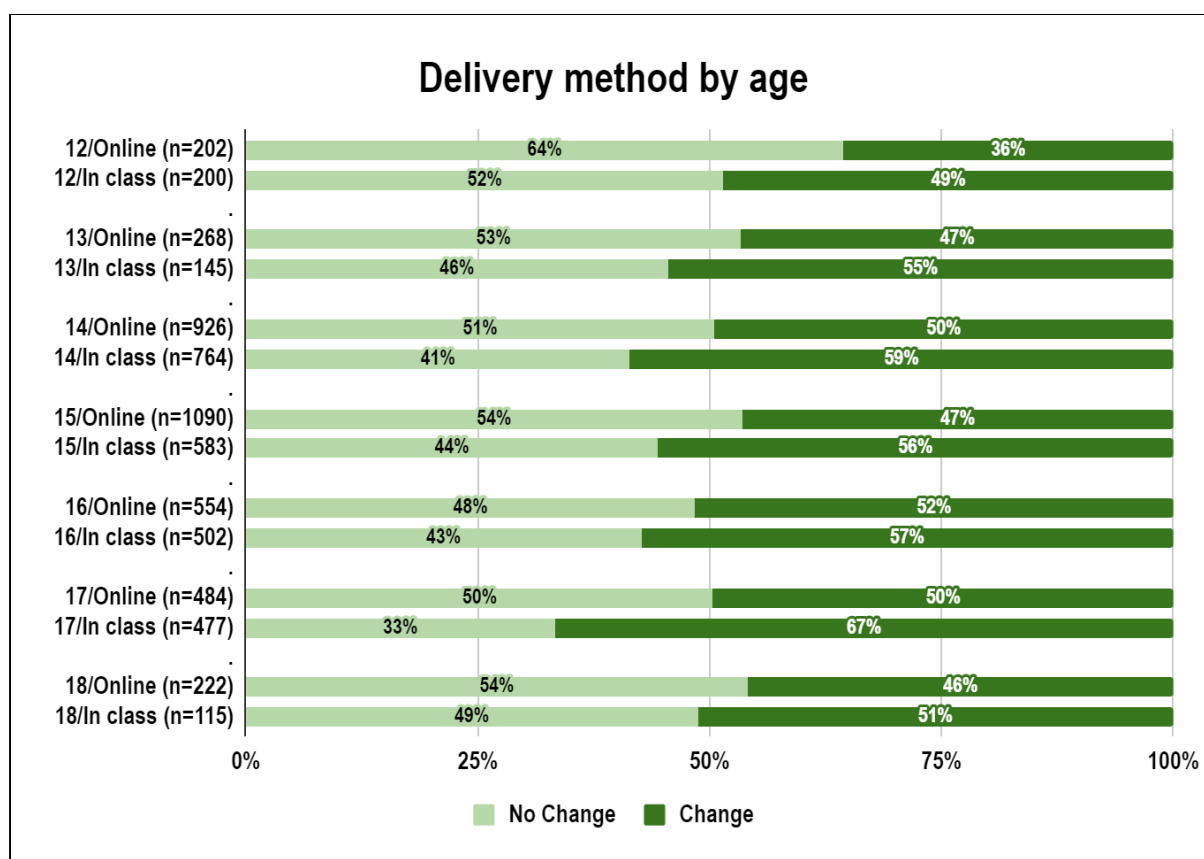
As shown, **in-class presentations achieved more dietary change intentions than online videos by ten percentage points**. A chi square analysis indicated that this difference is significant ($\chi^2(1)=63.320, p<0.001 \mid V=0.095$).

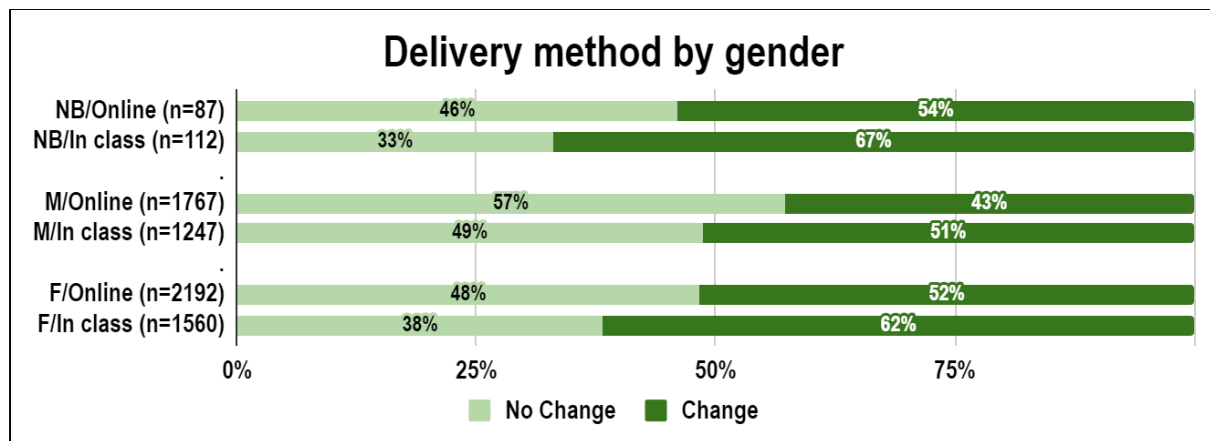


The difference between in-class and online presentations is smallest for the Environment and Modern Agriculture (5.5pp) and largest for the Future of Food (15.9pp) ($\chi^2(8)=123.236$, $p<0.001$ | $V=0.133$).



It appears that the difference is approximately the same regardless of gender, but **in-class presentations may be slightly more important for younger students.**

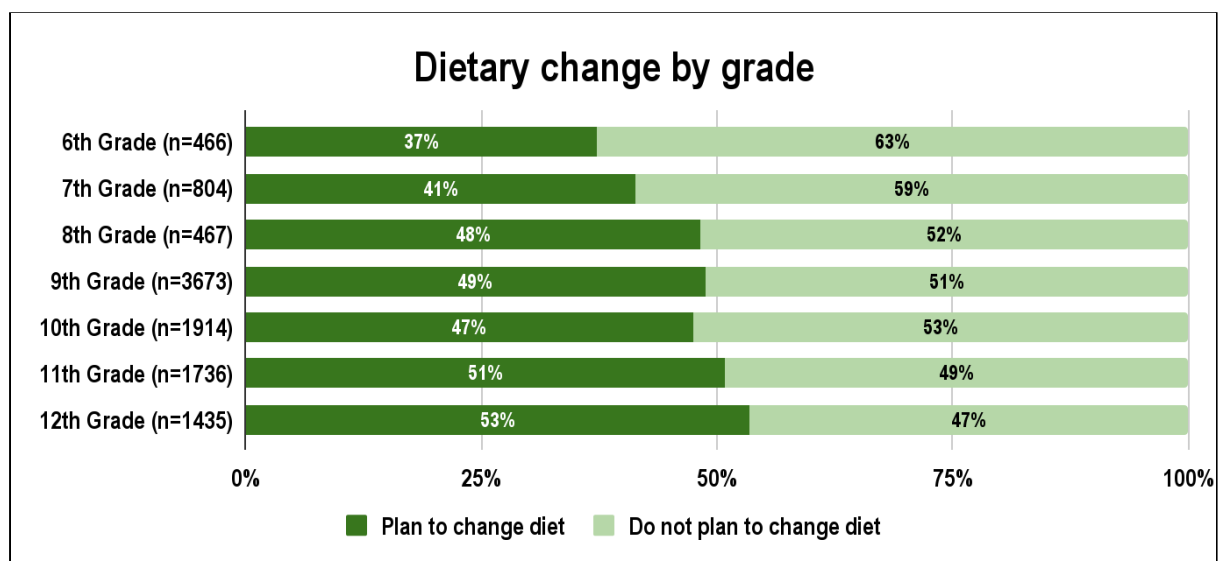
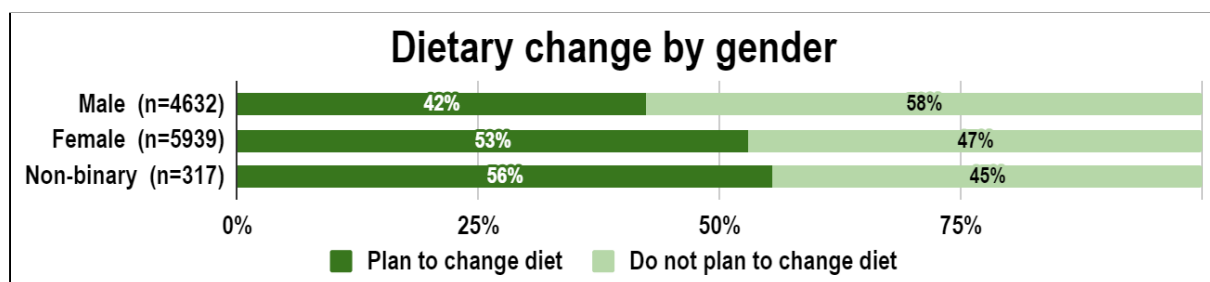




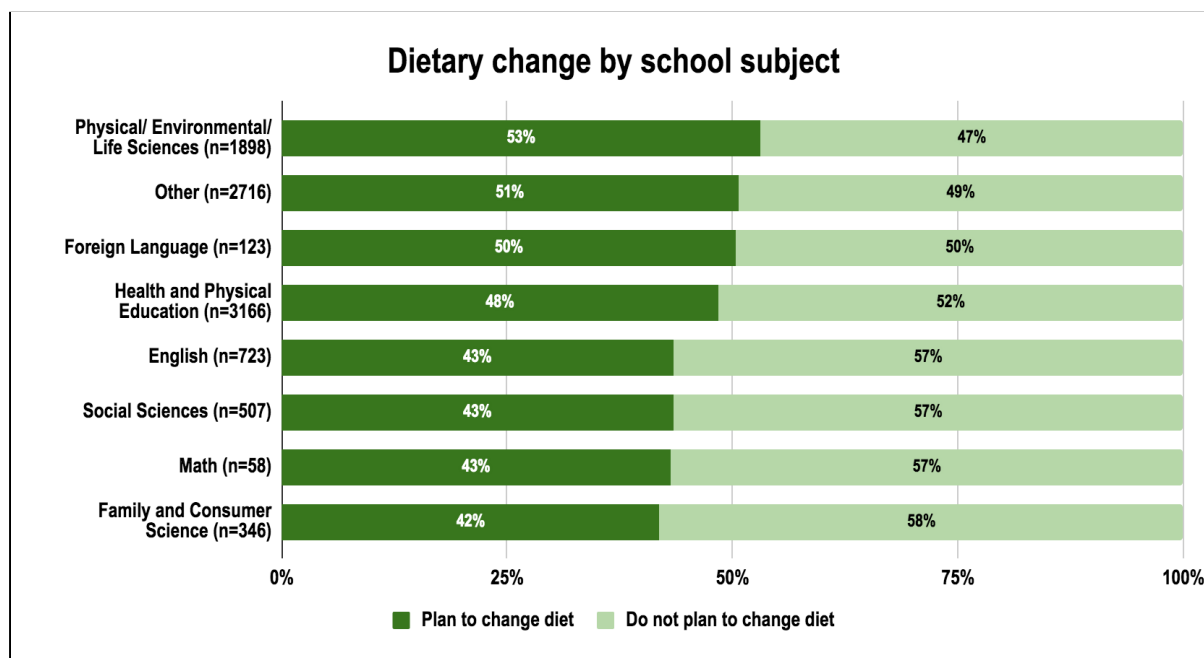
3.4. Most receptive demographics & communities

G. Females, older students, and students in science classes are most open to dietary change

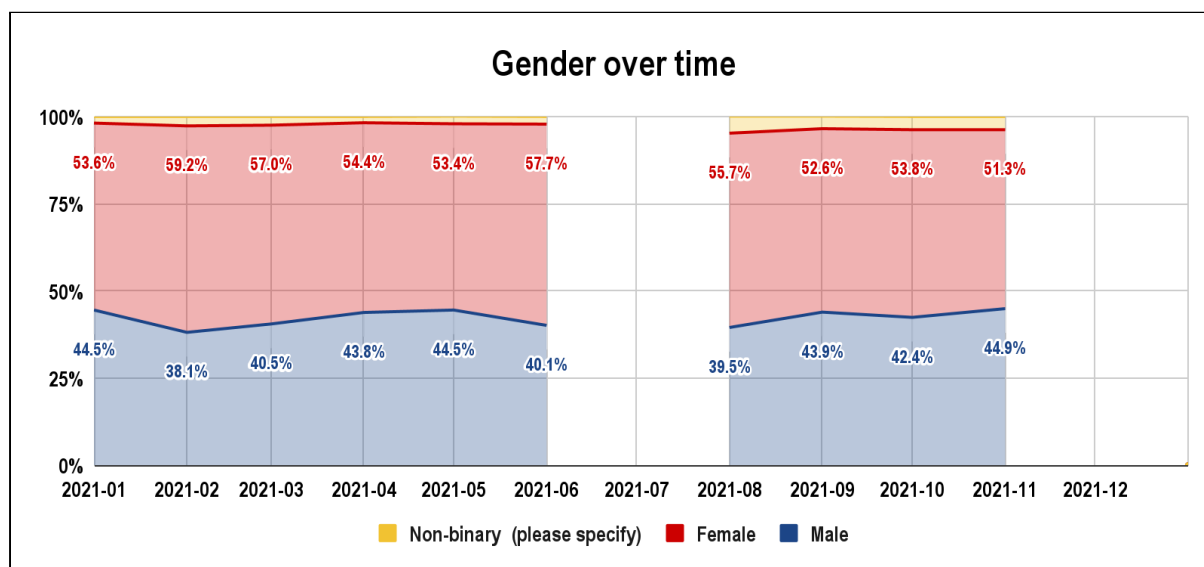
As shown, **females and non-binary students were far more likely to plan to change their diets compared to male students**. There was an 11 percentage point difference between males and females, and a chi square analysis indicated that the gender difference was significant ($\chi^2(2)=123.766$, $p<0.001$ | $V=0.107$).



As shown here, there is also a tendency for **older students to be more open to dietary change**. A chi square analysis indicated that the differences in outcomes by grade were significant ($\chi^2(6)=58.471$, $p<0.001$ | $V=0.075$).

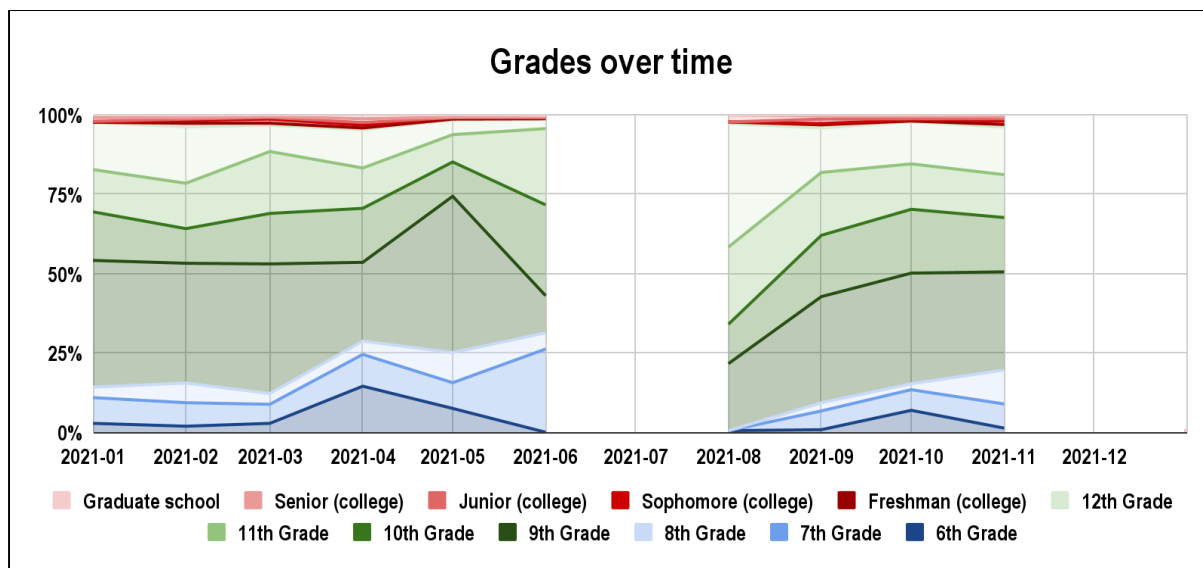


We can also see up to an 11 percentage point difference in dietary change intentions between different school subjects. **The subjects associated with the highest proportion of students planning to change their diet were physical, environmental and life sciences (53%)** while the lowest was family and consumer science (42%). A chi square analysis indicated that the difference based on school subject was statistically significant ($\chi^2(7)=39.066$, $p<0.001$ | $V=0.064$).



As shown here, females represent between 51%-59% of respondents, while males are 38%-45% of respondents. In terms of grades, high school students typically

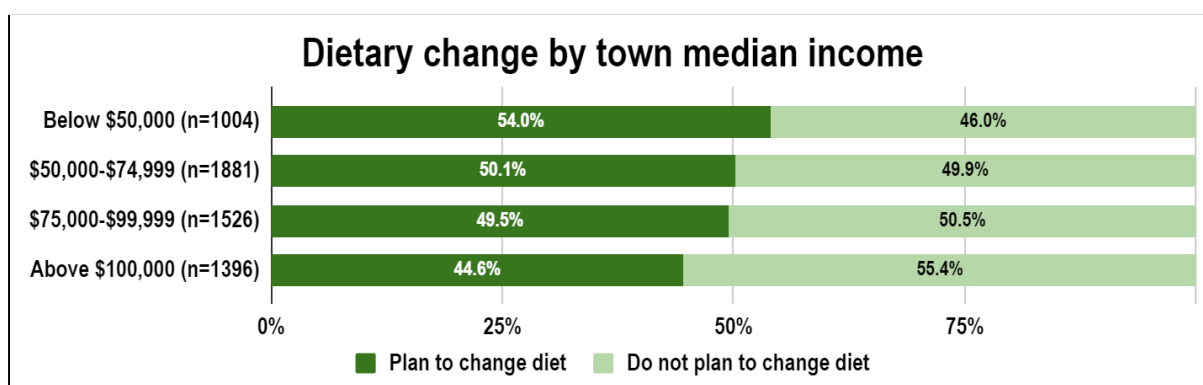
make up at least 75% of respondents, while middle-schoolers are between 10% and 25%. At present, college students are less than 5% of respondents.



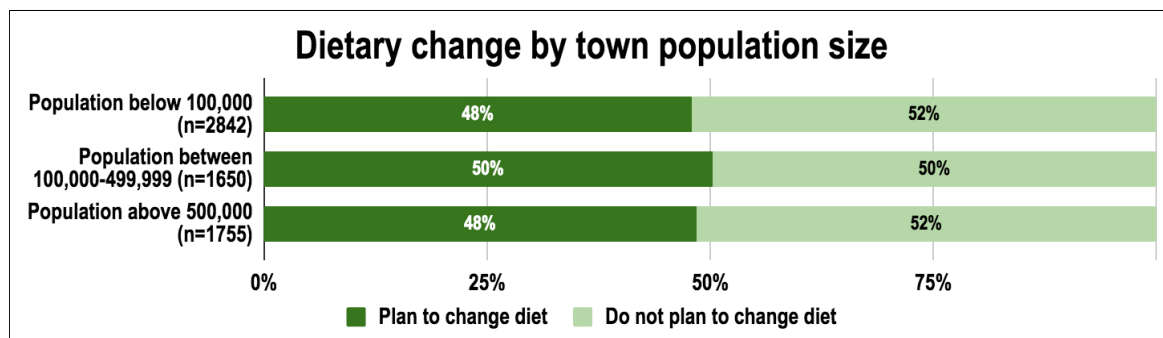
H. Most change is achieved in lower-income and more conservative communities, but less is achieved in more agricultural states

As shown, there was a 9 percentage point difference between respondents based on their town's banded median income. **46% of those from towns with median incomes above \$85,000 intended to change their diet, compared to 55% of those from towns with median incomes below \$60,000.**

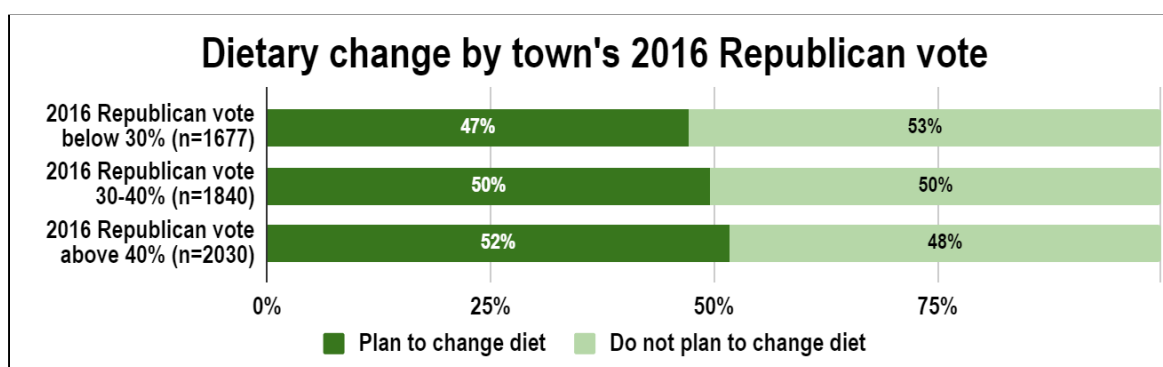
A chi square analysis indicated that this difference was statistically significant ($\chi^2(3)=21.563$, $p<0.001$ | $V=0.061$).



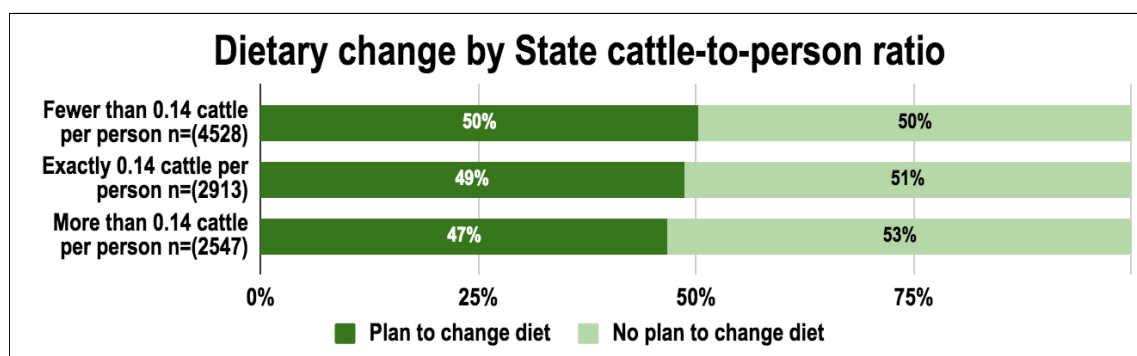
Similar analysis indicated no significant difference in impact based on town population ($\chi^2(2)=2.387$, $p=0.303$ | $V=0.020$).



However, we did observe a significantly **higher rate of dietary change in towns with a higher 2016 Republican vote** ($\chi^2(2)=7.272$, $p=0.026$ | $V=0.036$).



Finally, we observe a higher rate of intended dietary change among students from states with a lower ratio of cattle-to-people. Hence, there is **less expected change in States with higher levels of animal agriculture** ($\chi^2(2)=8.079$, $p=0.018$ | $V=0.028$).



4. Concluding Remarks

4.1. Recommendations

Based on the analyses in this report, I make the following recommendations for maximizing education program impact.

1. For presentations overall:

- a. Presentations positively influence students' intended and self-reported diets.
- b. Health, animals, and the environment are the most important motivators.
- c. Taste and family diets are the most important barriers, but their importance is declining over time.
- d. The most frequently-mentioned theme was animals.

2. To optimize content delivery:

- a. Healthful Eating and Ethics of Eating are the most effective presentations for inspiring change; Future of Food is least effective.
- b. In-person presentations achieve about 10% more change than online videos.

3. To target the most promising students:

- a. Females, older students, and those in science classes are most open to change.
- b. More change is achieved in lower-income and more conservative towns, but less is achieved in more agricultural states.

4.2. Limitations

There are several limitations to our current setup worth considering. First, our current analysis relies on self-reported data, and is therefore fallible in terms of accuracy. As well as participants altering their responses in line with demand effects, they may also misinterpret questions or simply make mistakes in responding. That said, it is encouraging that many of the trends we observed are in line with what we would expect based on other research.

Second, many of the most powerful and insight-generating analyses are 'under construction' as we have not yet collected enough data. This includes email subject line testing, follow-up survey responses, and importantly, control survey responses. This year represented a complete overhaul of the survey system, meaning that data collection started fresh. However, the systems are all in place to collect all the necessary data for these additional analyses, and future reports will include those insights.

4.3. Future plans

There are two major priorities for the Living Lab in the coming year. First, we will extend to new analyses, which are outlined in Appendix B. This will mean collecting

more data from control groups, follow-up surveys, and email outreach, but also collecting data on actual food choices through collaborations with university partners. We have ongoing conversations with the University of Bath and Stanford University to make this happen. Through these extended analyses, we will arrive at powerful new insights about how to further optimize both presentations and email outreach.

Second, we will publish and publicize selected findings in academic journals and public white papers. As well as bolstering the credibility of ECP's claims to impact, this will share the insights generated here with the wider education and animal advocacy communities, in turn helping to increase their impact.

References

Bryant, C., & Dillard, C. (2020). Educated Choices Program: An Impact Evaluation of a Classroom Intervention to Reduce Animal Product Consumption. Available at <https://osf.io/hecyk/>

Jalil, A. J., Tasoff, J., & Bustamante, A. V. (2020). Eating to save the planet: Evidence from a randomized controlled trial using individual-level food purchase data. *Food Policy*, 95, 101950.

Mathur, M. B., Peacock, J., Reichling, D. B., Nadler, J., Bain, P. A., Gardner, C. D., & Robinson, T. N. (2021). Interventions to reduce meat consumption by appealing to animal welfare: Meta-analysis and evidence-based recommendations. *Appetite*, 105277.

Schwitzgebel, E., Cokelet, B., & Singer, P. (2020). Do ethics classes influence student behavior? Case study: Teaching the ethics of eating meat. *Cognition*, 203, 104397.

Schwitzgebel, E., Cokelet, B., & Singer, P. (2021). Students Eat Less Meat After Studying Meat Ethics. *Review of Philosophy and Psychology*, 1-26.

Appendices

Appendix A: Survey Instrument

P1. Information & Consent

We invite you to take part in this survey, which will help us understand the impact of our presentations on students. You do not have to take part in the survey, and you can stop at any time. If you complete the survey, you will have the chance to win a \$100 Amazon gift card!

About the survey

We want to understand how our presentations impact the students who watch them. In particular, we are interested in your ideas about food. You have been asked to take part because you have seen a presentation given by the Educated Choices Program.

What to do

You will take a 10 minute survey now, and at the end you can provide your email address to be entered into the \$100 Amazon gift card prize draw. We will contact you after 3 months with a 10 minute follow-up questionnaire, and you can complete the follow-up questionnaire for ANOTHER chance to win a \$100 Amazon gift card! (Yes, there are two chances to win!) There are no risks or costs to taking part, and you can stop at any time.

How the data will be used

Your responses will be kept on secure encrypted accounts and computers, and will be handled in line with the UK's Data Protection Act 2018 as well as the University of Bath's Data Protection Policy. Your personal information will never be made public, and will be not be stored any longer than 2 years. This project has been approved by the University of Bath's Psychology Research Ethics Committee.

Further information

For further information, you can email:

Chris Bryant, Project researcher: C.J.Bryant@bath.ac.uk
University of Bath Psychology Research Ethics Committee Chair:
psychologyethics@bath.ac.uk

- * 1. Please check the box to take the survey:
 - a. I understand the above information and I consent to take part in the survey.

P2. About You

* 2. What is your current school grade or college level?

* 3. How old are you?

* 4. What is your gender?

- a. Male
- b. Female
- c. Non-binary (please specify)

* 5. Which of the following best describes your diet?

- a. Meat-eater (no restrictions on eating animal products)
- b. Meat-reducer (reducing meat consumption or only eating it occasionally)
- c. Fish eater (eats plant-based foods, eggs, dairy, and fish)
- d. Meat-free (eats plant-based foods, eggs, and dairy)
- e. Completely plant-based (eats only plant-based foods)
- f. Other (please specify) _____

* 6. In the past 3 months, how often did you eat these foods?

(Never, Less than once per MONTH, 1-3 times per MONTH, Once per WEEK, 2-4 times per WEEK, 5-6 times per WEEK, Once per DAY, 2-3 times per DAY, 4 or more times per DAY)

- a. Meat (any type of meat, including beef, pork, chicken, turkey, fish, shellfish, or other meats)
- b. Beef (hamburger, steak, roast beef, meatloaf, in stews / lasagna / pasta / pizza / etc.)
- c. Pork (bacon, ham, pork chops, spare ribs, bacon bits, etc.)
- d. Chicken (wings, nuggets, chicken breast, chicken sandwich, in soup, etc.)
- e. Turkey (turkey dinner, turkey sandwich, turkey burger, turkey bacon, in soup, etc.)
- f. Fish, not including shellfish (salmon, tuna, fish sticks, haddock, fish & chips, etc.)
- g. Shellfish (lobster, shrimp, scallops, oyster, crab, etc.)
- h. Other meats (duck, lamb/sheep, goat, bison, etc.)
- i. Dairy (cheese, milk, yogurt, ice cream, butter, etc.)
- j. Eggs (boiled, fried, omelet, in salad, in baked goods, etc.)
- k. Plant-based meat substitutes
- l. Plant-based fish substitutes
- m. Plant-based dairy substitutes
- n. Plant-based egg substitutes

* 7. Please enter the name of your school:

* 8. Please enter the name of the town/city your school is in:

* 9. Please select the country your school is in:

* 10. Please select the state or region your school is in:

P3. About your Diet

* 11. In the future, what type of diet do you intend to eat?

- a. Meat-eater (no restrictions on eating animal products)
- b. Meat-reducer (reducing meat consumption or only eating it occasionally)
- c. Fish-eater (eats plant-based foods, eggs, dairy, and fish)
- d. Meat-free (eats plant-based foods, eggs, and dairy)
- e. Completely plant-based (eats only plant-based foods)

* 12. Do you have any specific intentions of changing your diet for the following foods? Please indicate how.

(Start eating; Eat more; Eat the same amount; Eat less; Stop eating; Continue not to eat)

- a. Meat (any type of meat, including beef, pork, chicken, turkey, fish, shellfish, or other meats)
- b. Beef (hamburger, steak, roast beef, meatloaf, in stews / lasagna / pasta / pizza / etc.)
- c. Pork (bacon, ham, pork chops, spare ribs, bacon bits, etc.)
- d. Chicken (wings, nuggets, chicken breast, chicken sandwich, in soup, etc.)
- e. Turkey (turkey dinner, turkey sandwich, turkey burger, turkey bacon, in soup, etc.)
- f. Fish, not including shellfish (salmon, tuna, fish sticks, haddock, fish & chips, etc.)
- g. Shellfish (lobster, shrimp, scallops, oyster, crab, etc.)
- h. Other meats (duck, lamb/sheep, goat, bison, etc.)
- i. Dairy (cheese, milk, yogurt, ice cream, butter, etc.)
- j. Eggs (boiled, fried, omelet, in salad, in baked goods, etc.)
- k. Plant-based meat substitutes
- l. Plant-based fish substitutes
- m. Plant-based dairy substitutes
- n. Plant-based egg substitutes

* 13. Which of the following do you consider the biggest motivations for eating a more plant-based diet? (You can select several)

- a. Benefiting the environment
- b. Benefiting your health
- c. Benefiting the animals
- d. Improved food safety
- e. Global food security
- f. Saving money
- g. Taste preference
- h. None
- i. Other (please specify) _____

* 14. Which of the following do you consider the biggest barriers to eating a more plant-based diet? (You can select several)

- a. I like the taste of meat and animal products
- b. Plant-based foods are too expensive
- c. Eating plant-based is too inconvenient
- d. Health reasons
- e. My friends and peers eat meat
- f. My family eat meat
- g. I don't think there are good reasons to eat less meat
- h. No barriers
- i. Other (please specify)

* 15. To what extent do you feel you have control over which foods you eat?

- a. None at all
- b. A little
- c. A moderate amount
- d. A lot
- e. A great deal

P4. About Cultivated Meat

* 16. Please indicate your interest in eating each of the following foods:

(Definitely would not eat; Probably would not eat; Maybe would eat; Probably would eat; Definitely would eat)

- a. Cultivated meat
- b. Cow-free dairy
- c. Plant-based meat
- d. Plant-based dairy

* 17. Please indicate the importance of each of the following potential benefits of cultivated meat in your view.

(Very unimportant; Quite unimportant; Maybe important; Quite important; Very important)

- a. Being better for animals
- b. Being better for the environment
- c. Being healthier (e.g. less saturated fat)
- d. Being safer (e.g. less risk of infections)
- e. Helping to alleviate world hunger

* 18. Please indicate the importance of each of the following issues in your decision whether to eat cultivated.

(Very unimportant; Quite unimportant; Maybe important; Quite important; Very important)

- a. Taste
- b. Price
- c. Naturalness
- d. Safety
- e. Healthiness
- f. Novelty or unfamiliarity

P5. About ECP

* 19. Have you previously seen another presentation by ECP?

- a. Yes
- b. No
- c. Don't know

* 20. In which class did you see the presentation today?

- a. English
- b. Foreign Language
- c. Health and Physical Education
- d. Math
- e. Physical/Environmental/Life Sciences
- f. Social Sciences
- g. Family and Consumer Science
- h. Other (please specify)

21. What did you learn today that was most surprising, memorable, or interesting?

* 22. Please enter the name of your educator today (or if you saw the presentation as an online video, write 'video')

* 23. To what extent do you agree with the following statements?

(Strongly disagree; Disagree; Neither agree nor disagree; Agree Strongly agree)

- a. The information presented today was supported by reliable sources.
- b. It is important for students to learn about the information presented today.
- c. I already knew a lot about the information presented today.
- d. The educator was nonjudgmental and respectful to students.
- e. The educator was knowledgeable about the information presented.

24. Please let us know any additional feedback you have about the presentation or the educator:

P6. Final Questions

25. Please enter your email address so that we can contact you if you win the \$100 Amazon gift card! (Optional)

P7. Debriefing

Thank you for taking part in the survey!

If you have provided your email address, we will contact you if you win the \$100 Amazon gift card draw! We will also contact you with a follow-up survey and another chance to win after at least 3 months.

The purpose of this survey is to assess the impact of presentations by the Educated Choices Program. Your survey responses corresponds to the particular version the presentation you have seen today. By analysing all the survey responses, we can identify ways of improving our presentations.

Your personal data will be stored on encrypted drives and computers and will not be stored for longer than 2 years from today. If you have questions about the survey, or if you want to withdraw your data (within 2 weeks), you can contact:

Chris Bryant, Project researcher: C.J.Bryant@Bath.ac.uk

University of Bath Psychology Research Ethics Committee Chair:
psychologyethics@bath.ac.uk

Appendix B: Future Analyses Under Construction

This section contains several analyses which have been started, but do not yet have enough data to provide meaningful insights. Nonetheless, the explanations and charts are useful to understand the insights that these analyses can produce in future iterations of the Living Lab. This includes data from a follow-up survey, a control group, and an experiment on different email subject lines.

B.1. Email subject line experiments

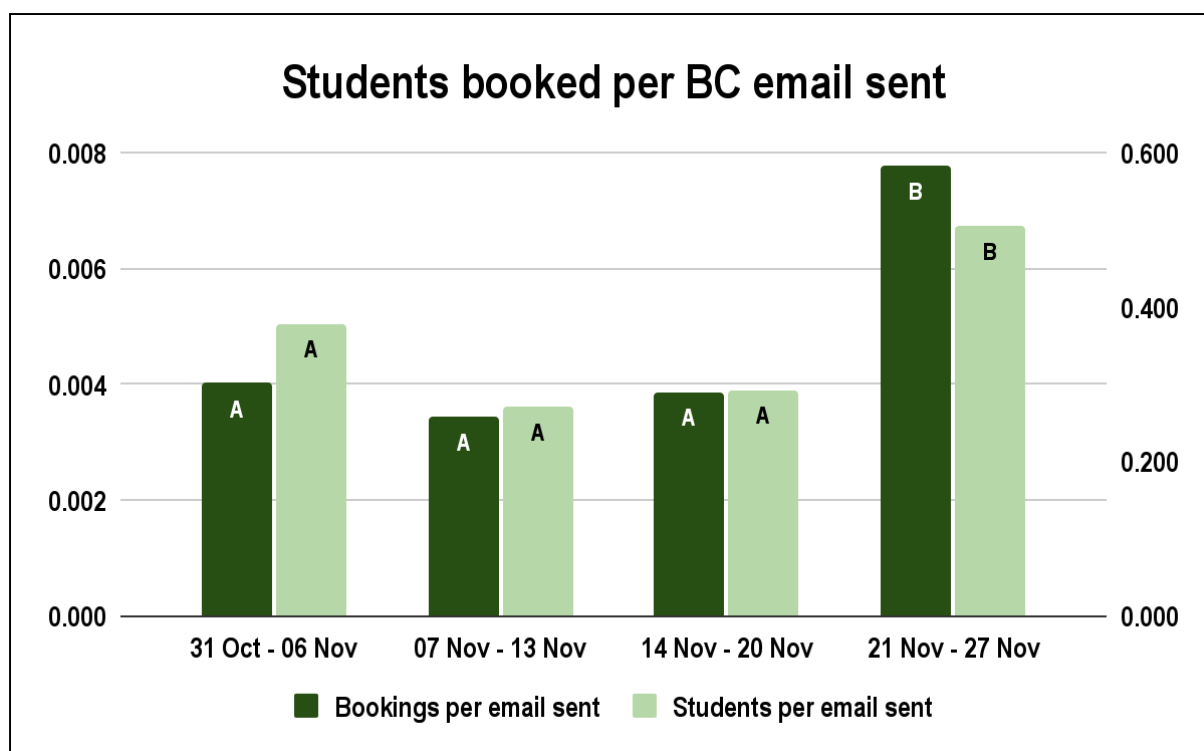
In this analysis, we modified the subject lines of emails sent to teachers to experimentally identify the subject lines leading to the highest number of students and bookings per email sent.

So far, we have achieved this by changing email subject lines every few weeks, and comparing the bookings per email between weeks. Although keeping the same subject line for several weeks allows us to control for a time effect to some extent, in the future we will explore testing these differences more robustly by having different Booking Coordinators use different subject lines in the same week, or by exploring additional options for recording subject line success rate.

This analysis represents a proof-of-concept for the current design. We report figures for the four weeks we have collected data so far - three weeks with one subject line, and one week with a different subject line.

Week	Subject Line	Subject Line Content
31 Oct - 06 Nov	A	<i>Educational Presentation + Lesson Plans for Your Students</i>
07 Nov - 13 Nov		
14 Nov - 20 Nov		
21 Nov - 27 Nov	B	<i>Healthful Eating Digital Presentations</i>

As shown, the time overlaps with Thanksgiving such that the only comparison data we have so far is from Thanksgiving week, and therefore contains a probable confounding variable. Although our outcome measures of bookings and students are per email, and therefore should be insensitive to the volume of activity, it is possible that other behaviours like teachers taking extended time off and therefore making fewer bookings are interfering in the final week.

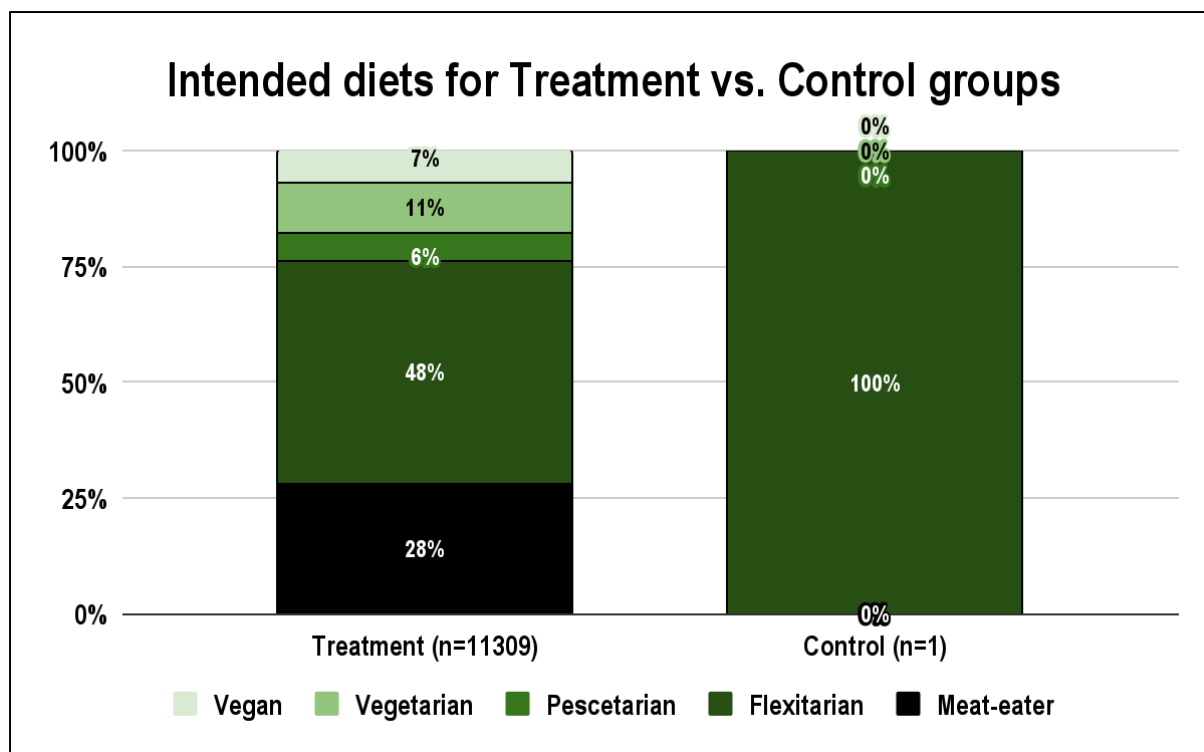


As shown, there is little variation between the first three weeks, which all used subject line A. In the fourth week, which used a different subject line, the number of bookings per email approximately doubled, and the number of students per email increased approximately 60%.

Although there is not enough data to draw firm conclusions here currently, early results are promising for this technique for measuring variation in email impact.

B.2. Treatment vs. Control

In this section, we report key outcomes for students who have seen an ECP presentation compared to a control group. The control group consisted of students who had not yet seen an ECP presentation, so one survey page about the presentation content was removed for this group, but otherwise the surveys were identical. Comparing responses for students who have seen an ECP presentation to the control group enables us to identify the impact of the presentation on key measures.

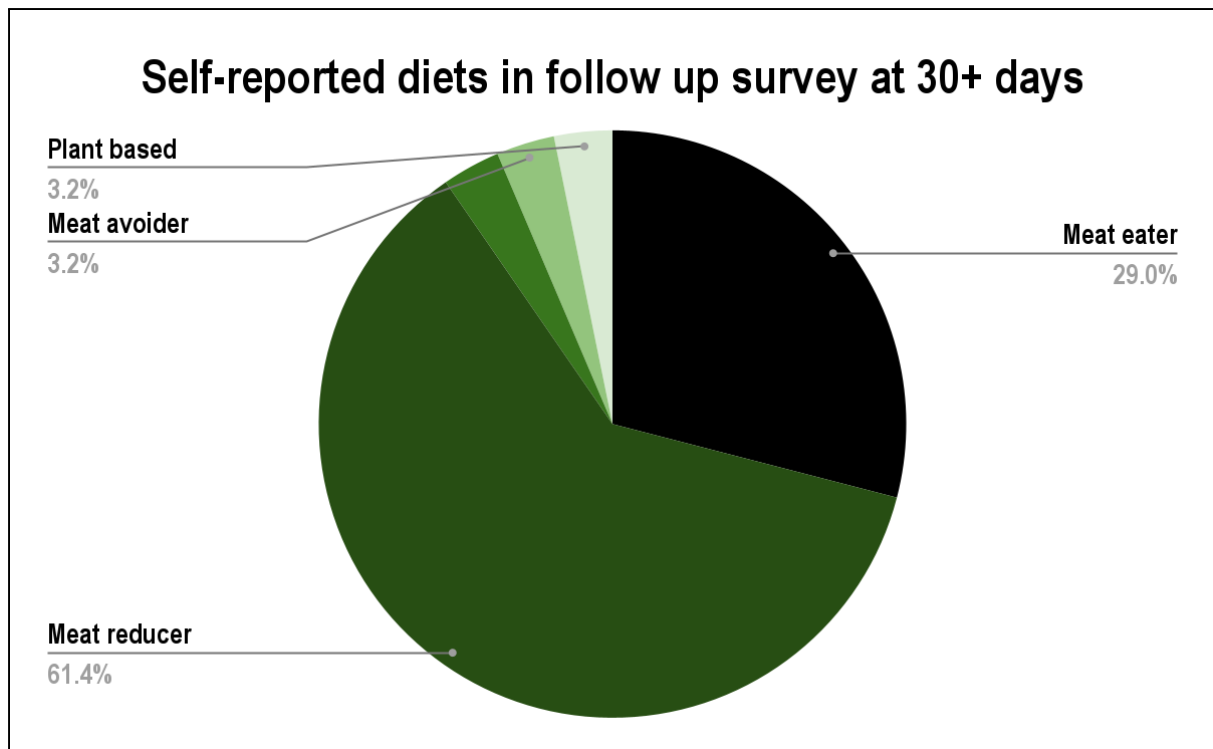


As shown, we currently do not have enough control data to draw any conclusions about the program impact using this method (just 1 valid responses). Next semester, collecting control group responses will be a priority for advancing this method for program evaluation.

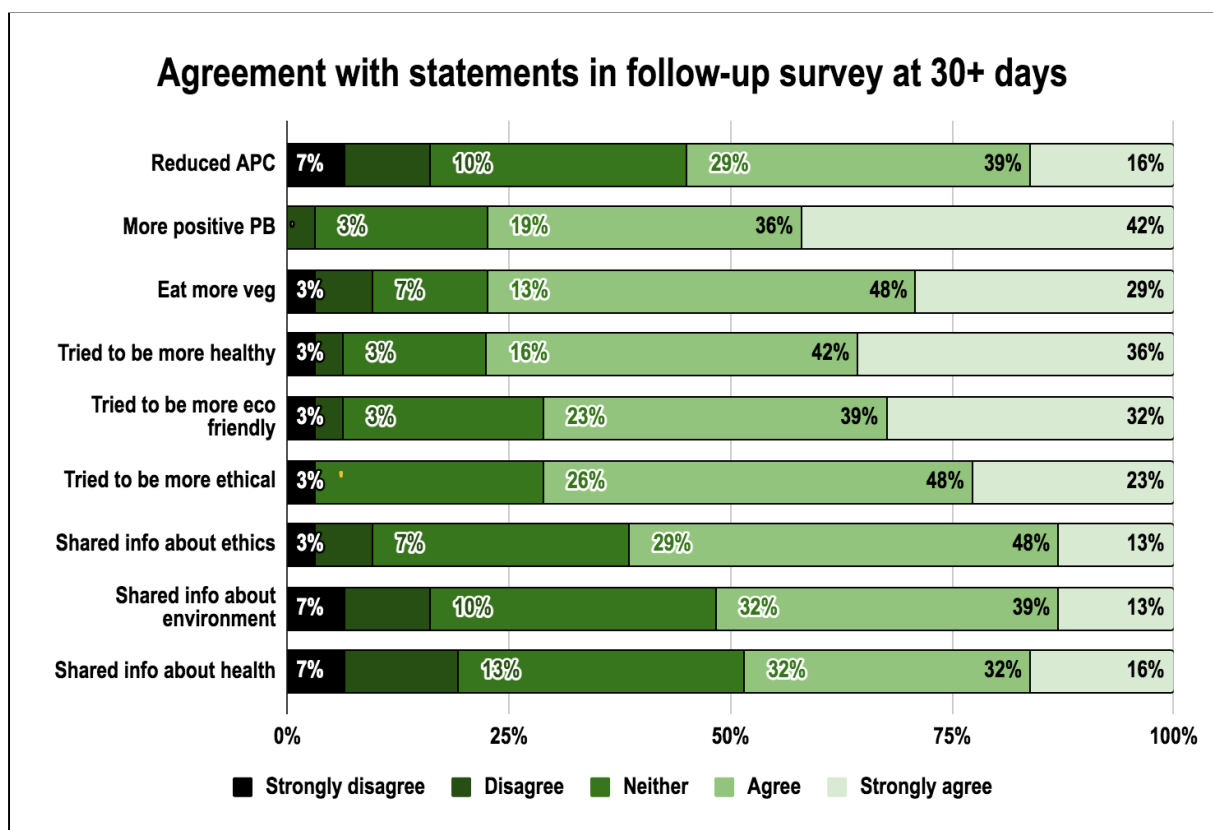
B.3. Follow up Surveys

In this section, we report on the data from follow-up surveys. Follow-up surveys were sent by email to students who (a) were over the age of 18, (b) gave their consent to be contacted for a follow-up survey, (c) provided valid email addresses, and (d) had seen an ECP presentation more than 30 days ago.

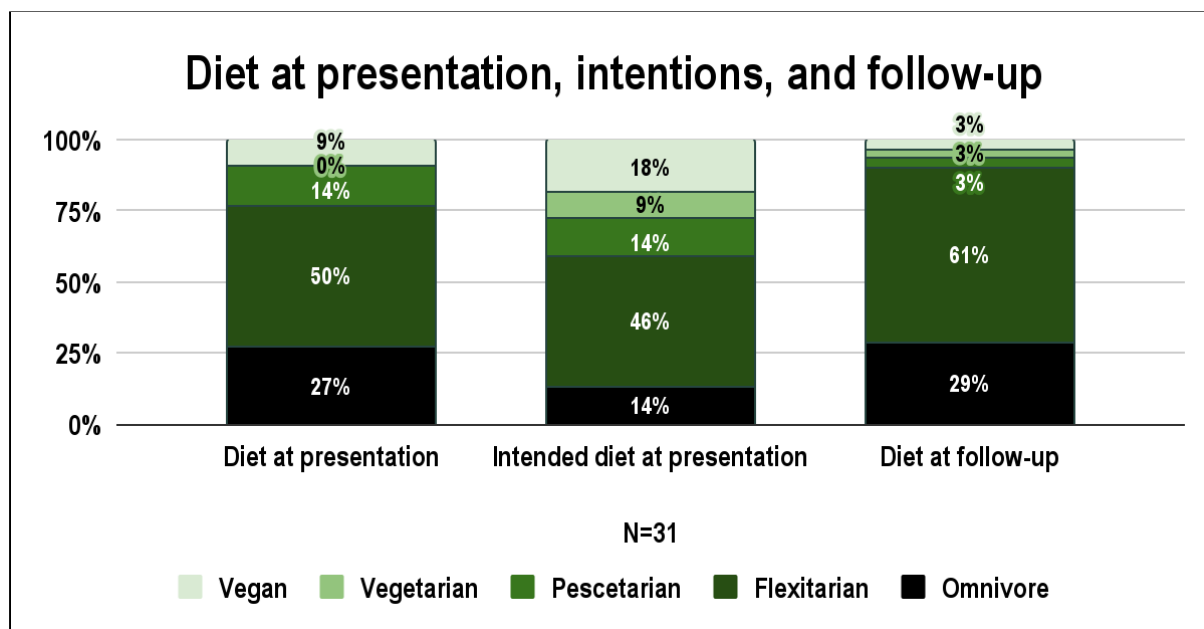
So far, the follow-up survey has only been sent out twice, to a total of 569 students, of whom just 31 have responded (5.4% response rate). Again, this sample size is too small to provide meaningful insights at this stage, but we can review the outcomes that the analysis will produce with more data.



As shown, the majority of students at follow-up reported being meat-reducers, and students tended to agree that they had developed more positive attitudes towards plant-based foods, eaten more vegetables, and made efforts to be healthier, more eco-friendly, and more ethical.



However, when we compare self-reported diets and intentions for the 31 students in the follow-up survey, we can see that their good intentions often did not materialize. Although 41% of students intended to follow meat-free diets after viewing the presentation, and just 13.6% said they would be unrestricted meat-eaters, self-reported diets at follow-up did not reflect these intentions.



The proportion of students self-reporting a meat-free diet actually decreased at follow-up compared to baseline, although the proportion of self-reported meat-reducers increased.

Again, there is not enough data for this analysis to have any confidence in the results, but these are included as a demonstration/proof-of-concept. That said, it is notable that these results (i.e. positive intentions but failure to follow through) are consistent with Mathur et al. (2021). Our future research in this area can uncover more of the details here, such as whether the effects of some presentations are more enduring than others.