

Fresh Roots: Increasing Local Food in School Cafeterias

LFS 350 Group 19
April 11, 2016

Executive Summary

LFS 350 Group 19, in collaboration with Fresh Roots and David Thompson Secondary School's Chef Lee Green, worked together to find ways to increase seasonal, local food prepared, sold and bought by students in David Thompson Secondary School's cafeteria. Our project stemmed from the previous LFS 350 group localEd's project initiative to integrate local food into schools in the Vancouver district; in tandem with the visibly low number of students buying food from the cafeteria at David Thompson Secondary School, and the concern of the nutritional content of the meals accessed by students elsewhere.

Our projects objectives were to create and administer a survey for the culinary class to find out students' food preferences; obtain information about their perception towards the cafeteria. In addition, use one of the recipes created by the previous LFS 350 group, to administer a taste test with the culinary class and survey the students afterwards.

Inquiry questions posed by our group were:

1. If the students buy food from the cafeteria, why or why not?
2. Will the recipe taste test be made feasibly and enjoyed by the students so it can be put on the cafeteria menu?
3. What are potential ways to increase student use and purchasing at the school cafeteria?

Our group collected qualitative data from the students through two surveys to obtain understanding of their opinions on the cafeteria environment, food, the

taste test and improvements that could be made to each; as well as if they buy food from the cafeteria, why or why not? Our results showed that over 50% of students brought lunch from home and the remainder didn't like anything on the menu. If they bought food from the cafeteria it was done infrequently throughout the year. Furthermore, the butternut squash pasta bake taste test received high ratings on ease of preparation and overall likeness but low ratings on purchasing or making it again.

From our findings we recommend that the students preference be taken into consideration when planning the cafeteria menu, which can be done through taste tests and surveys, to help increase seasonal, local food being prepared, sold and bought in the cafeteria. Moreover, our research was limited to a small culinary class; we suggest that further research with a greater sample size, such as all the students from David Thompson Secondary School, be conducted to obtain a better idea of the student populations' overall food preference. In addition to greater utilization of the schoolyard market garden, teaching kitchen and curriculum involving local food to generate informed students that are able to choose and advocate for healthier, local foods.

Introduction

From January to March 2016, our LFS 350 group 19 collaborated with Fresh Roots and Chef Lee Green, the culinary arts teacher at David Thompson Secondary. The school is located in the Victoria-Fraserview neighbourhood of Vancouver, B.C. (Fig. 1). In 2010, Chef Lee Green enlisted the help of Fresh Roots – an organization entrenched in increasing accessibility of local, nutritious food to everyone – to establish a schoolyard market garden in the vacant courtyard (Fig. 2) (Fresh Roots, n.d.). Currently, volunteers lead the schoolyard market gardens and the school uses some of the seasonal produce, about 10%, while the community purchases the rest (Personal communication, Marc Shutzbank 2016). In addition to making local, seasonal food more accessible to the students and the community, the schoolyard market garden is utilized for educational purposes to assist in enhancing the food literacy of the community (Fresh Roots, n.d.).

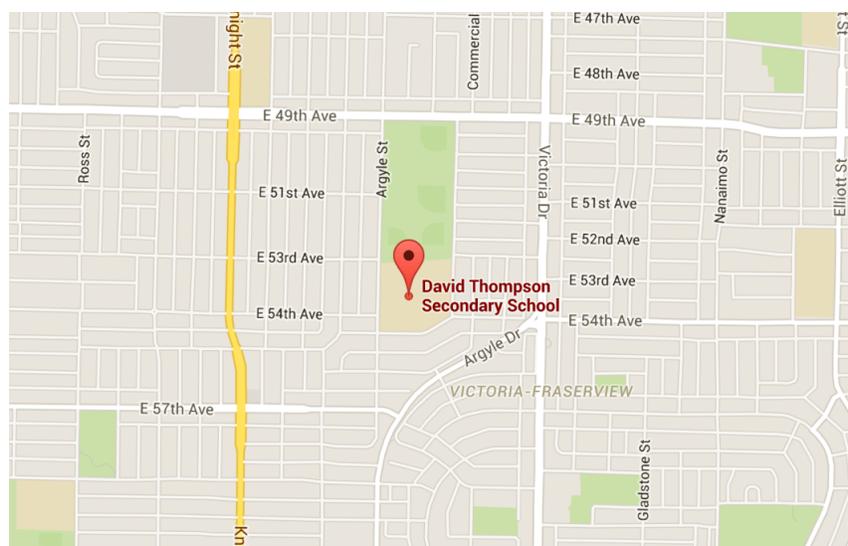


Figure 1. David Thompson Secondary School located in the Victoria-Fraserview neighbourhood of Vancouver, B.C. (Source: Google maps)



Figure 2. David Thompson Secondary Schools' schoolyard market garden
(Source: Fresh Roots, n.d.)

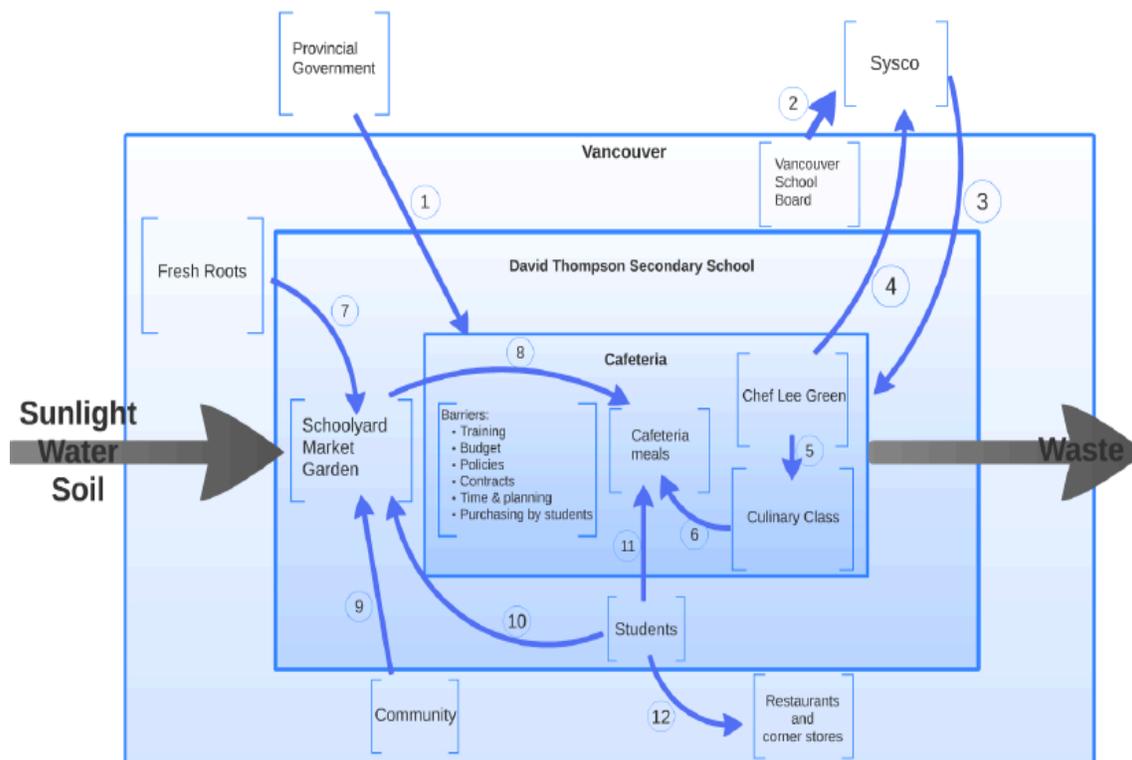
Black et al. (2015) conducted an assessment of 33 schools in the Vancouver District that showed that the schools' attempts at making local, seasonal and healthy food accessible to students were low and inconsistent. Furthermore, farm-to-school programs have been implemented on a small scale in the Vancouver district, which aim to enhance students' access to, involvement and interest in healthy, local food, as well as develop good relationships between schools, farmers and other local food providers (Food Secure Canada, 2013). Therefore, further research and projects are needed to find ways to increase the accessibility, of not only healthy but also local food, for schools and their students.

Our project stemmed from the previous LFS 350 group, localEd's initiative to assess the feasibility of integrating more local food into secondary schools in the Vancouver district. Our project aim was to assess the feasibility of increasing local food in David Thompson Secondary's cafeteria; we were to prepare the five recipes created by them to assess the feasibility of incorporating

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more local ingredients in meals served by the cafeteria. In addition, we wanted to get the students familiar with working with local, seasonal ingredients and have them indicate which dishes they preferred more. However, after our meeting with Marc Shutzbank of Fresh Roots, our project became more targeted towards finding out students' purchasing habits and preferences. The main issue was that a visibly low number of students were buying food from the cafeteria at David Thompson Secondary School, and there was concern for the nutritional content of meals accessed by students elsewhere. Hence, our primary task was to survey the students to find out their food preferences and their current perception of the cafeteria to increase utilization of the school cafeteria. Current interactions within the schools' food system and barriers to increasing local, seasonal food in the cafeteria are provided in our systems diagram (Fig. 3).

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1. Canada has no national school lunch program so food policies are made by the Provincial Government such as the B.C. Food and Beverage Guidelines which sets what food can and cannot be sold in schools
2. VSB allows bids for schools food supplier contract usually granted to bigger companies such as Sysco
3&4. Sysco supplies a majority of the food Chef Green orders for the cafeteria
5&6. Chef Lee Green teaches the culinary class and helps them prepare the cafeteria meals
7. Fresh roots provides labour, seeds, equipment for the school yard market garden
8. About 10% of the produce for the schoolyard market garden is utilized by the cafeteria
9. The community visits, volunteers and purchases the rest of the produce from the schoolyard market garden not utilized by the school cafeteria
10. The schoolyard market garden is used by student in many different classes helping to enhance their food literacy
11&12. Students bring lunches from home but also buy food from the cafeteria and from restaurants and corner stores of campus
13. Barriers to increasing local food into the school's cafeteria include: the training/skills of the culinary class, the budget constraints of the cafeteria, food policies and food supplier contracts, seasonality and planning of incorporating local food as well as the number of students purchasing food from the cafeteria

Figure 3. Systems diagram and legend of David Thompson Secondary School's food system.

The objectives of our project:

- Create and administer a survey for the culinary class to find students' food preferences; obtain information about their perception towards the cafeteria.

- Use one of the recipes created by the previous LFS 350 group, to administer a taste test with the culinary class and survey the students afterwards.

Inquiry questions posed by our group:

1. If the students buy food from the cafeteria, why or why not?
2. Will the recipe we taste test be made feasibly and enjoyed by the students so it can be put on the cafeteria menu?
3. What are potential ways to increase student use and purchasing at the school cafeteria?

Methods

Our group collected data qualitatively through two surveys we created and implemented. The first was adapted from The Center for Ecoliteracy (2013) school lunch survey, and the second survey was created to evaluate the taste test. We visited David Thompson Secondary School to collect data on March 7th, 2016. The first survey was given before the taste test; the 7 students took the survey on Google Forms using iPads supplied by Chef Green. After the survey was complete our group observed and photographed the students as they went through the steps of making the taste test recipe, butternut squash pasta bake; which was chosen by Chef Lee Green from the five recipes created by the previous LFS 350 group. The students, our group and Chef Green then sampled the dish after which the second survey was then administered to the students.

The data collected was then organized into pie charts and bar graphs. We were then able to use the charts and graphs to evaluate the student's opinions of the taste test recipe and the cafeteria. This allowed us to further analyze and provide recommendations about the feasibility of incorporating local ingredients into the schools' cafeteria meals as well as increasing student purchasing.

Ethical Considerations

Our project involved working directly with a vulnerable population, the students, so ethical concerns were taken into account throughout the whole process. Both surveys administered and filled out by the students were done so voluntarily and anonymously, with no personal identifiers. In addition, we received permission from and were under the supervision of their culinary teacher Chef Green for the surveys and the taste test.

Results

The data we collected prior to the taste test, from our adapted Center for Ecoliteracy (2013) school lunch survey, showed us that over half of the students obtained their lunches from home while the remainder acquired it from off campus sources (Fig. 4). When the students did purchase lunch from the cafeteria it is done infrequently with none of the students surveyed buying from the cafeteria every day (Fig. 5). The reasons for their inconsistency or evasion to buying food from the cafeteria was because they either brought their lunch from home, or they didn't like anything on the menu (Fig. 6). Generally, the students

perceived the food served in the cafeteria to be pretty healthy (Fig. 7), and the majority rated the cafeteria food overall to be pretty good (Fig. 8).

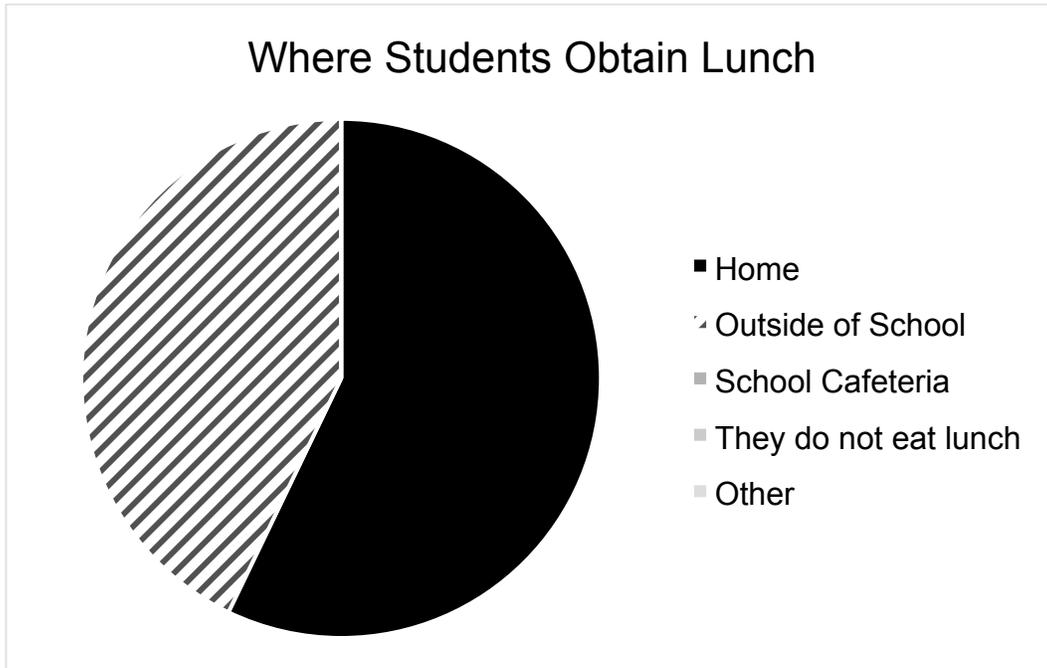


Figure 4. The means by which students obtain their lunches.

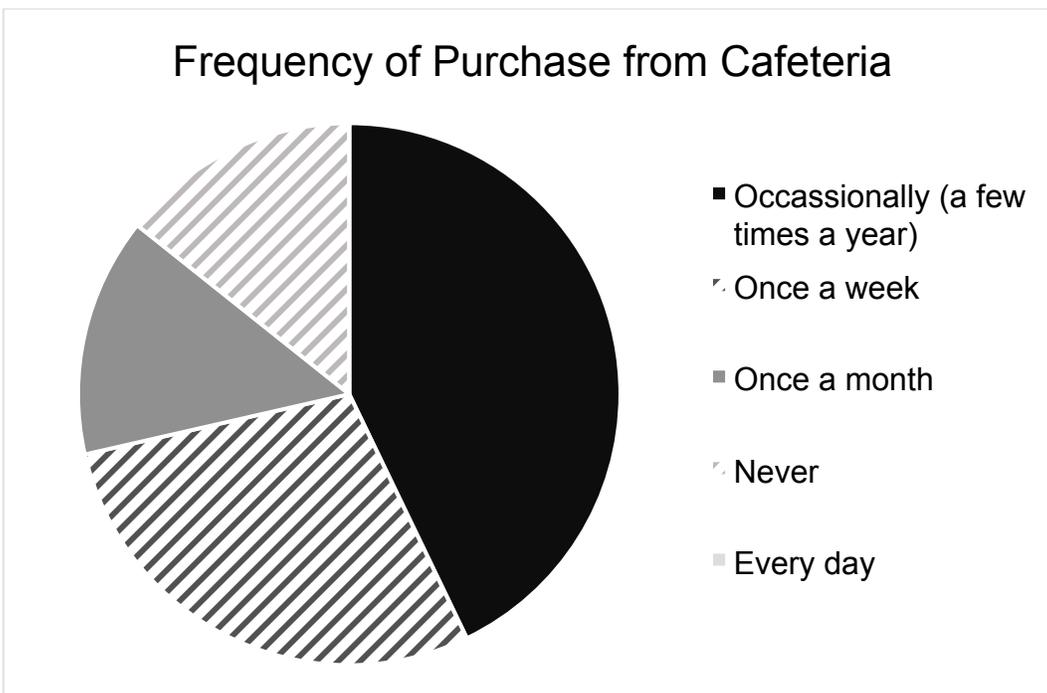


Figure 5. Frequency of cafeteria food purchase by students.

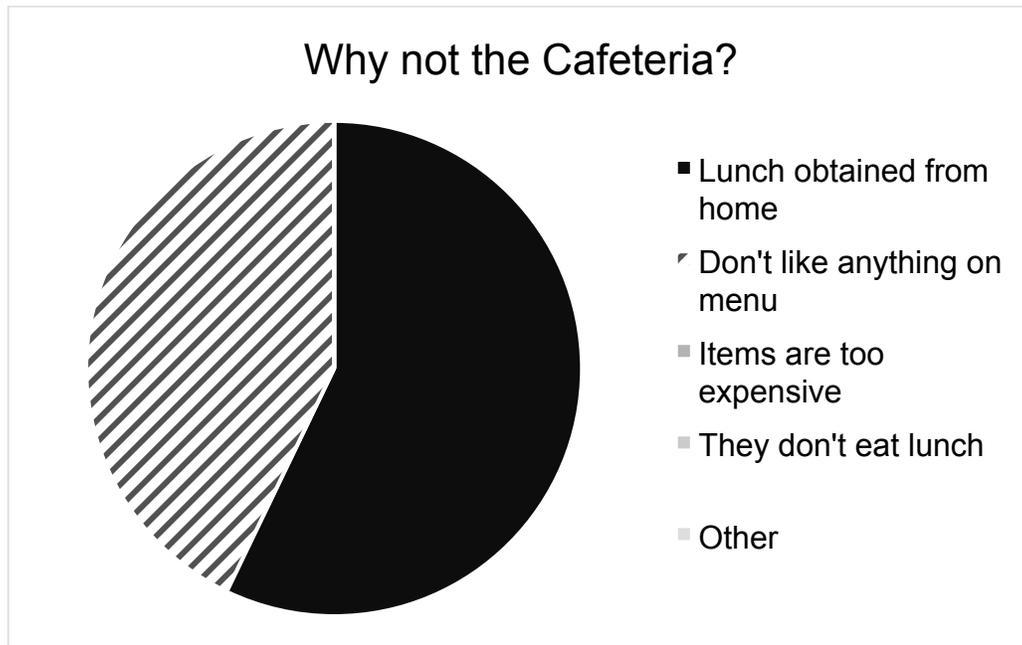


Figure 6. Reasons for the students at not purchasing food from the cafeteria.

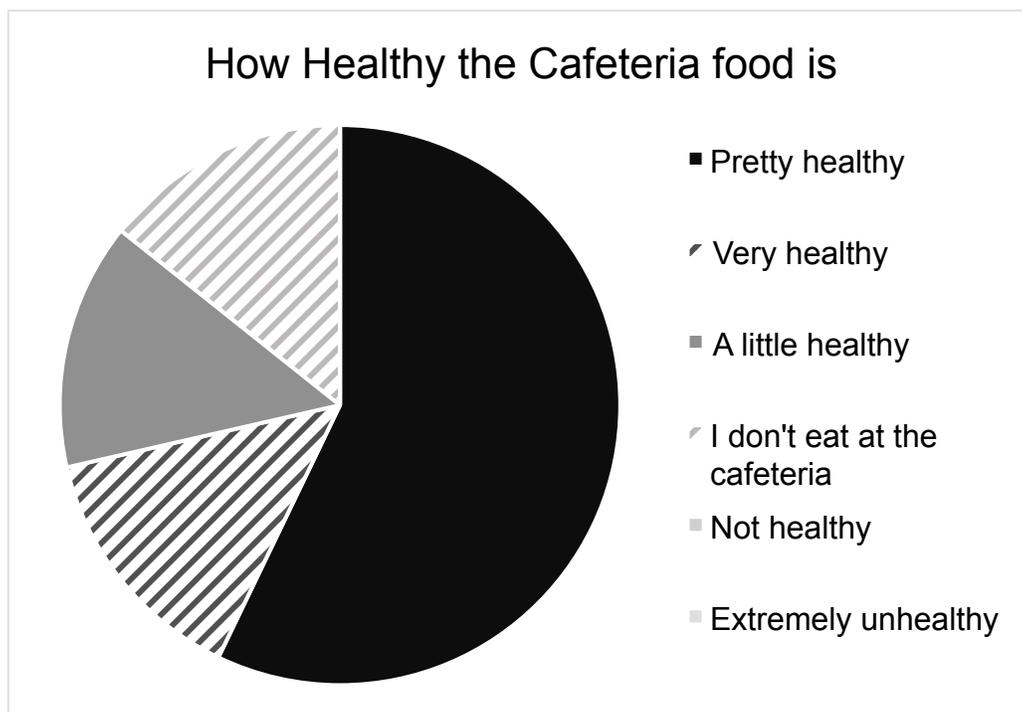


Figure 7. The students' perception of how healthy the cafeteria food is.

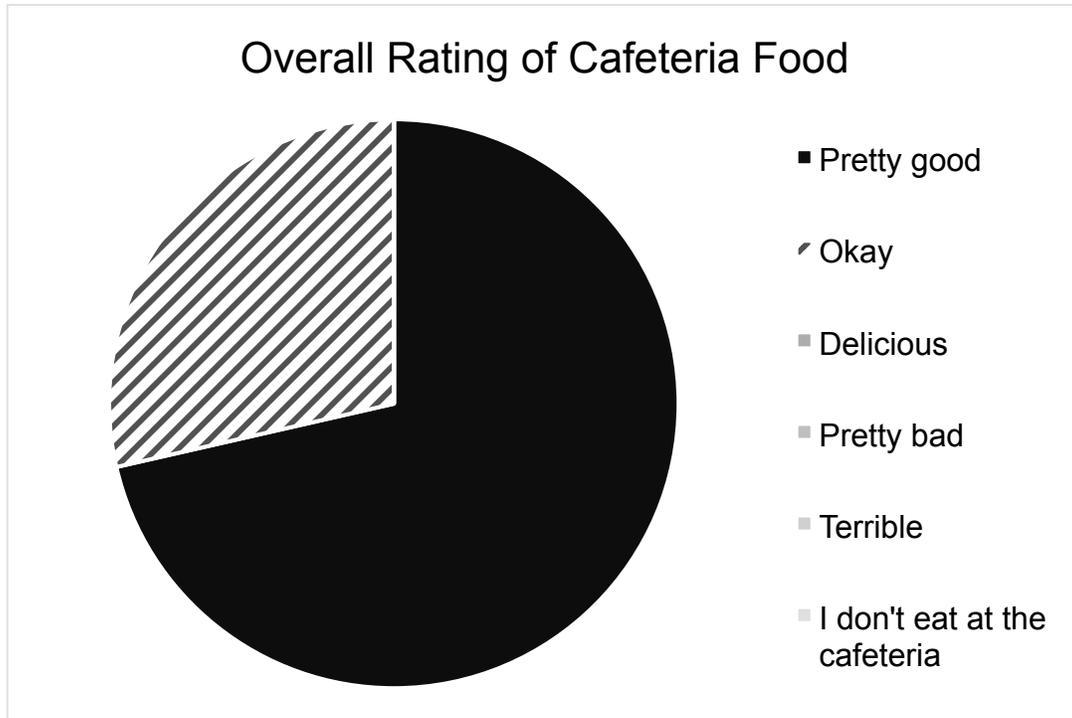


Figure 8. The students' overall rating of the food served by the cafeteria.

After the taste test we collected students' opinions through a secondary survey, which had a 1-5 rating for each category, on how it was preparing the recipe and how much they liked the dish as well as the likeliness of them making it again or purchasing it. We averaged their results in overall likeness (3.86), ease of preparation (4.33), likelihood of preparing again (3.71) and likelihood of purchase (3.57) (Fig. 9).

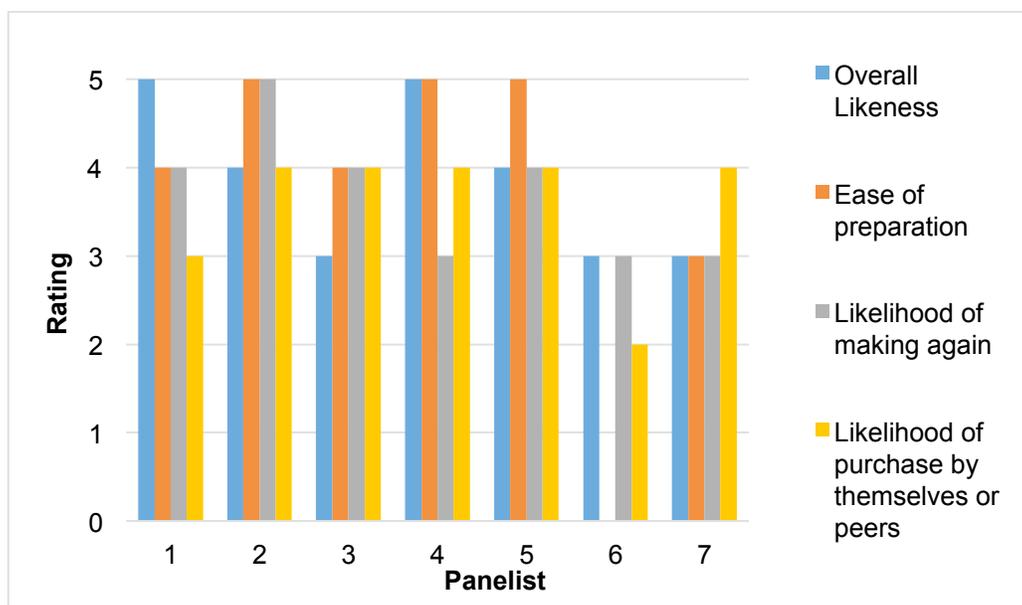


Figure 9. Student results of the post taste test survey.

The opinions we obtained from the students on the overall atmosphere of the cafeteria were divided; some liked the current cafeteria setting, a few were indifferent and some felt as though it had some deficits. Two students stated that they wanted a bigger space, and another wrote expressing their wish to change the arrangement of the cafeteria. Lastly, the students gave their opinion on what they would like to see in the cafeteria in the future; the majority wished for more variety in the food served, a few suggested more vegetarian options should be added to the menu while some others wished that more students would visit or use the cafeteria.

Discussion

The data we collected from surveying the culinary students allowed us to gain insight into why the students underutilize the cafeteria, through their preferences towards the cafeteria food environment. In response to our first

inquiry question, we found that students primarily obtained food from home or off-campus (Fig. 4). When asked why they chose not to purchase food from the cafeteria, they indicated food was obtained from home or they did not like any of the items on the menu. Marc Shutzbank was initially worried that cost may also be a factor, but so far our results indicate that other reasons were more influential than cost (Fig. 6). In addition, he inquired if cultural appropriateness of the food was the source, however our results were unable to determine this; hence, further research is needed. The meals served in the cafeteria were generally perceived by the students to be quite healthy (Fig. 7). Furthermore, our findings show the potential disconnect and disinterest from students toward the cafeteria food and environment as previously stated as a concern by Marc Shutzbank in our first meeting.

The taste test and the secondary survey we administered allowed us to see if the recipe would be feasible and appropriate to add to the cafeteria menu. Relative to the students' positive response to its taste and ease of preparation, scores for likelihood of making again or purchasing were lower. The high ratings for ease of preparation, in tandem with all the local ingredients for the recipe costing around \$2.57 per serving (LocalEd, 2015), allowed us to conclude that it would be feasible to prepare this recipe in the cafeteria. Although, since the likelihood of them purchasing or making it again were given a lower rating by the students, this meal may not be bought by many students if sold at the cafeteria. The four remaining recipes should be taste tested and compared by students to

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this recipe and see if the others would be more feasible and appropriate to add to the menu.



Figure 10. The culinary class preparing the butternut squash pasta bake.



Figure 11. Butternut squash pasta bake prepared by the culinary class.

In addition to discovering why the students underutilized the cafeteria our findings showed that the students would like to see a more diverse cafeteria menu with the addition of more vegetarian options. Moreover, there were varying responses on the atmosphere of the cafeteria but some changes were suggested such as a bigger space, rearranging the cafeteria and increasing student use. These findings showed us that the students have a lot of ideas for improving the cafeteria food and atmosphere. These opinions could be taken into consideration to help increase purchasing and use of the cafeteria by students. Additionally opinions from the entire student population could be obtained, through further surveying and taste tests, to gain a broader perspective on how to increase students' use of the cafeteria.

Farm-to-school programs, such as Fresh Roots' schoolyard market garden at David Thompson Secondary School, assist in enhancing students' access to, involvement and interest in healthy, local food, as well as develop good relationships between schools, farmers and other local food providers (Food Secure Canada, 2013). Currently Farm Folk City Folk, a Vancouver non-profit organization has been collaborating with the Vancouver Board of Education to incorporate more local food into the curriculum at Vancouver schools (Farm Folk City Folk, n.d.). Initiatives such as these allow students to learn about and get involved in their local food system, which motivates students to choose and advocate for healthier, local foods to be accessible to them (Morgan and Sonnino, 2007). Therefore, providing more programs and

curriculum that educate students on the importance of local food as well as taking into consideration the students input when planning cafeteria menus could increase students' use and purchasing. In addition, it would allow more local food to be accessible to students increasing their food security.

Limitations

One of the limitations during this study was the small sample size. The input of the students we surveyed may not reflect that of the whole student population within David Thompson Secondary. Additionally, a potential bias is present, as students in the culinary class are involved with the cafeteria and the meals to a greater degree compared to the other students. Consequently, their perceptions may not reflect that of the entire student population. If we had a larger sample size, the results may have been able to provide a greater insight into why the students aren't purchasing food from the cafeteria and their food preferences. Furthermore, we were not able to test all five recipes provided by the previous LFS 350 group. Therefore, we could not compare the feasibility of preparing them in the cafeteria setting and their ranked preference by students.

Conclusion

This community project has shed some light on student preferences and perceptions of the school cafeteria at David Thompson Secondary School. Additionally, we were able to identify some factors that may be deterring students from purchasing food served by the cafeteria. The students we

surveyed provided valuable feedback and suggestions on the cafeteria food and environment that could be taken into consideration to increase student purchasing and use of the cafeteria. Moreover, the students we surveyed were aware of the importance of serving and eating healthy food; showing promise to our community partners in their pursuit of serving more healthy, local food in the cafeteria. Whilst the previous group focused on increasing local food available to students in all schools throughout Vancouver we have reached similar suggestions for David Thompson Secondary School moving forward; the continued and increased investment in the schoolyard market garden and teaching kitchens. They are evidently valuable assets to the school in increasing the accessibility and facilitating education about local food to the students; enhancing the rate at which they are utilized will contribute greatly to their cause, as determined by the principles of Asset-Based Community Development. In addition, we recommend introducing more curriculums involving local food targeted at educating and creating more informed students that are able to choose and advocate for healthier, local foods.

Appendix

Appendix A: Pre-taste test survey adapted from The Center for Ecoliteracy (2013) school lunch survey

We need your opinion on the school cafeteria! Please help us out by completing this survey.

1. Where do you normally get lunch from?
 - a. I get it from home
 - b. I buy it outside of school
 - c. The school cafeteria
 - d. I do not eat lunch
 - e. Other (please specify): _____

2. How often do you buy food from the cafeteria?
 - a. Every day
 - b. Once a week
 - c. Once a month
 - d. Occasionally (a few times a year)
 - e. Never

3. If you choose not to purchase food from the cafeteria, what is the main reason?
 - a. Too expensive
 - b. I don't like anything on the menu
 - c. I normally get/bring lunch from home
 - d. I don't eat lunch
 - e. Other (please specify): _____

4. If you've ever bought food from the cafeteria, how would you describe the food? (Use 3 or more words)

5. How would you rate the food served by the cafeteria?
 - a. Delicious
 - b. Pretty good
 - c. Okay
 - d. Pretty bad
 - e. Terrible
 - f. I don't eat at the cafeteria

6. How healthy do you think the food served by the cafeteria is?
 - a. Very healthy
 - b. Pretty healthy
 - c. A little healthy
 - d. Not healthy
 - e. Extremely unhealthy
 - f. I don't eat at the cafeteria

7. What is your favourite item from the cafeteria? _____
What do you like most about it? _____
How healthy do you think it is? _____

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- a. Very healthy
- b. Pretty healthy
- c. A little healthy
- d. Not healthy
- e. Extremely unhealthy

8. What is your least favourite item from the cafeteria?

Why is it your least favourite? _____

How healthy do you think it is?

- a. Very healthy
- b. Pretty healthy
- c. A little healthy
- d. Not healthy
- e. Extremely unhealthy

9. What is your favourite meal from home?

How healthy do you think it is?

- a. Very healthy
- b. Pretty healthy
- c. A little healthy
- d. Not healthy
- e. Extremely unhealthy

10. What do you think of the seating arrangement/atmosphere in the Cafeteria:

- a. I like it!
- b. It's alright
- c. Needs to be changed

11. What would you change about the seating/atmosphere of the cafeteria?

12. What would you like to see more of in the cafeteria in the future?

List up to three things:

Appendix B: Butternut Squash Pasta Bake recipe (Source: LocalEd, 2015)

Butternut Squash Pasta Bake

INGREDIENTS (For one portion)	PRICE
Penne Pasta	\$0.47/ cup
Butternut Squash (local)	\$0.20/ 125g (~½ cup)
Canned Tomato Sauce w/ Herbs	\$0.23/ 3 tbsp
Garlic	\$0.02/ ½ clove
Low Fat Mozzarella	\$1.35/ 125 g (~½ cup)
Olive Oil	\$0.10/ tbsp
Salt	\$0.0025/ ¼ tsp
Pepper	\$0.025/ ¼ tsp
TOTAL: \$2.57	

OVERALL TASTE TEST RATING: 48/50

SUPERTRACKER NUTRITION ASSESSMENT	
CALORIES	438
CARBOHYDRATE	52% (57 g)
PROTEIN	17% (19 g)
FAT	31% (15 g)

INCLUDED FOOD GROUPS IN CANADA'S FOOD GUIDE TO HEALTHY EATING	
VEGETABLES & FRUIT	1
MEAT & ALTERNATIVES	2.5
GRAINS	2
OIL (VEGETABLE)	1 tbsp

Cooking Instructions:

1. Cut butternut squash into half and bake with a splash of olive oil (~ ½ tbsp) until very soft. Scoop out filling and blend until smooth.
2. Boil penne pasta in water (with a pinch of salt) until al denté.
3. Sauté garlic with ½ tbsp olive oil and mix into tomato sauce with penne. Add salt and pepper to taste.
4. Pour pasta into a baking tray, layer with blended butternut squash and top it with low fat mozzarella cheese. Bake until cheese is golden.

	SUPERTRACKER DATA	B.C. FOOD AND BEVERAGE GUIDELINES (MIXED ENTRÉES)
SODIUM	344 mg	900 mg
FAT	15 g	17 g

Appendix C: Post taste test survey

Do you have this food often?	Yes	No			
Did you like this dish?	1	2	3	4	5
How easy was it to make?	1	2	3	4	5
Would you make it again?	1	2	3	4	5
Would you or your friends buy this from the cafeteria?	1	2	3	4	5

Appendix D: Critical Reflections

Student 1

The act of simply improving and focusing on the strengths of the David Thompson culinary program turned out to be a lot harder than I had anticipated due to all the different players in the school food system. The depth of understanding we needed was extensive, and throughout the duration of the project we kept discovering more variables in the system. All the components of this project heavily relied on a group effort, because the tasks for collecting information and compiling it required going off campus and at specific time slots. The flexible learning sessions were very beneficial to our project because they allowed us to travel as a group and thus complete our project on time. As a person with little community work, our visit to the school was an especially valuable experience to me because seeing the garden for myself and watching the students cook with fresh ingredients made me realize just how real this type of intervention is, how effective they can be, and ultimately how much more I can do as an undergraduate student. Right now as a FNH student I have been accustomed to hearing and complying with the term “minimizing deficiency” that

this approach we took (focusing on the strengths) really allowed me to see things in a different light.

Student 2

The course content and required readings taught me that there are multiple ways to tackle problems and help others with theirs. Upon first learning about the Asset-Based Community Development (ABCD) approach, and watching Ernesto Sirolli's talk, I was almost shocked at how I had buried these simple concepts, thinking they were inefficient and ineffective. This course has shown me many practical applications of these concepts, and demonstrated their effectiveness on multiple occasions, allowing me to critically reflect on how I wish to approach problem solving from this point forward.

Being a part of this community project has also reminded me that there is much more to my academic career than getting all A's; this was definitely a refreshing and rewarding break from being marked on my results. Coming from a more academically focused background, it's almost our duty to make sure that everything in our studies is well controlled and within certain limits in order to get these 'good results'. There were definitely times in this project where it seemed too uncontrolled for my likings, pushing me right out of my comfort zone. However, with the support of my group mates, our instructor Will and TA Carrie, I was not only able to conquer my insecurities, but successfully implement myself in a community group project setting. Thanks to this experience, I move

forward with the confidence that I can work together with a group of people and come up with working solutions to problems.

Student 3

This course has allowed me to put my academic knowledge to use through Community Based Experiential Learning, which is very rare in many of the other courses I take. This experience has allowed me to gain knowledge and experience outside of the classroom, which I really enjoyed. It also taught me how to communicate and work effectively with the community.

In addition, I found that the Flexible Learning sessions were very helpful because it allowed our entire group to be available at the same time to work on the project or engage with our community partners. Group projects are usually hard to get everyone together due to different schedules and then having to fill people in if they couldn't make it. These sessions really helped keep every member of our group equally involved and aware of what was going on which made the project go a lot smoother.

Our group was a mixture of Food Nutrition and Health students, Food Science students and one Applied Biology student, which made it difficult to have the same perspective or approach during our project. Although, since we all had different views and previous experiences, it allowed for more diverse ideas and solutions than one point of view would permit, which helped to make our project better. As this course comes to an end, I feel as though all of these

experiences I gained throughout it will be valuable assets that I will utilize in my future career.

Student 4

At the beginning of the term, I felt very lucky to get the Fresh Roots project, and thought it would be easier than most other projects. However, as project went by and after several meetings with our community partners, I gradually found that it was pretty different from what I originally expected. Our community partners could not lead us for our project or tell us their experiences; we had to design, plan and decide everything. In fact, we even met some difficulties when we negotiated with our community partners. When our group met at flexible learning time and tried to figure those questions out, I firstly felt that I am in a real community and only using academic knowledge is not enough. I need to learn how to lead the project by myself and how to cooperate with local people.

Besides that, I learned a lot of knowledge that I am interested in. I am an international student from Asia, and I was not familiar with the Canadian food system. This term's experience taught me what the Canadian food system looks like and what school lunches entail. I compared the two food systems and learned what different problems both are facing. When I did online researching about North America school lunches, I was surprised about the high percentage of adolescent obesity here. However, at the same time, I noticed that North

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American has advantages, which is school lunch meal program that aims to provide cheap and healthy lunch for students.

Student 5

Throughout my academic years, I have mostly focused on global issues and ways to improve/solve global problems. LFS 350 was a unique course in terms of its focus boundary, which was community based. This gave me a different perspective on solving issues and that is why I enjoyed my CBEL project a lot. Another aspect I really liked about this project was that unlike studies we read or create on paper, this was a realistic study make the results actually matter. Being part of a study with different areas to reach like community partners, TAs, and even group members reflected a real career wise study. The flexible learning times made the process go smoother since we had time to visit both our community partners. If we hadn't had those times, it would've been more difficult to set a common time with all of our group members and community partners. Even though we have come across a lot of obstacles and moments of uncertainties, by using our resources and critical thinking strategies, we were able to overcome those. CBEL project and all its components like e-lectures, flexible learning experience has enabled me to see and experience a real life, career-like environment.

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