

Final Report: Food Literacy at Livingstone Elementary School

LFS 350

December 3rd, 2015

Executive Summary:

It is crucial to develop nutrition and healthy eating skills at an early age for lifelong health. The Community Based Experiential Learning project we completed this year involved creating two workshops on food, nutrition and dairy literacy for grade five and six students at Livingstone Elementary School. Food and nutrition literacy is an issue at this school. Our workshop objectives aimed to develop effective methods of teaching and activities for food literacy, to assess how the different styles of teaching change the engagement of the students, and also to assess how beneficial the workshops were for the students. To answer these questions, qualitative and quantitative questions were asked throughout the workshop. Quantitative questions involved students raising their hands to answer questions assessing nutritional knowledge. Qualitative questions included questions assessing what the students learned after each workshop, and parts of the workshop they enjoyed the most. Data also included the observations from each member of our group. After compiling and analyzing the responses, results showed that hands-on activities and games demonstrated the highest retention and satisfaction rate from the students. Recommendations for future projects included involving parents with a take-home activity, as well as planning games for the end of the workshops to reduce noise levels. Objectives for this project were met, assessed and answered.

Introduction:

Food choice plays a significant role in our daily lives. As children develop eating habits at an early age, their ability to identify healthy food is important. With this in mind, learning about healthy lifestyles is incorporated into the school curriculum, as nutrition and rest are essential for preventing disease and sustaining a healthy lifestyle (Ministry of Education, 2006). To promote healthy living, we presented nutrition workshops to grade five and six students at

Livingstone Elementary in Vancouver's Mt. Pleasant neighborhood. Last year budget cuts terminated the lunch program, requiring students to bring their own lunch. Students have had little exposure to the school garden on site, as it is non-curricular and parent-run. Furthermore, student exposure to nutrition concepts has been brief. Cultural and socioeconomic differences within this community setting made this project challenging, rewarding, but mutually beneficial for all parties involved.

Our project had three main objectives. First, we had to assess existing nutrition knowledge in students. Secondly, we had to design workshops to engage students in nutrition education. Lastly, we evaluated workshop effectiveness through a final assessment of the students' nutrition knowledge. Our workshops aimed to answer the following:

1. Are some methods of teaching more effective than others to introduce food literacy?
2. How will workshop style and presentation change participation and engagement?
3. Did students benefit from these workshops?

This report will explore the answers to these questions and develop a framework of understanding to inform future research.

Methods:

Both quantitative and qualitative data were collected throughout our project. Questions were developed prior to the workshops to assess student knowledge and experience. In the beginning of our first workshop, students were asked a series of nutrition-based questions and quantitative data was collected through the number of raised hands counted after asking each question. An example of a question we asked was "Is drinking Coca-Cola part of a healthy diet?" At the end of the first workshop, qualitative data was collected by asking the students a new set of questions, including:

1. Which part of the workshop did you like the most? Why?
2. What was one new thing that you learned today?

Project quality was evaluated through a group reflection after each workshop. We discussed what went well and what we could change in preparation for the next workshop. In our second workshop, we asked the students what they remembered learning from the last workshop in order to determine its effectiveness. Answers were recorded by group members and added to our qualitative data. The same questions at the end of workshop one were asked at the end workshop two in order to determine gained knowledge, and their favorite aspects. We requested feedback from the teacher however no response was given.

An analysis of our project was done by comparing the observations of each group member during the workshops and thoughts that members had afterwards. We examined student engagement and reviewed the responses of both quantitative and qualitative questions. Our assessments determined the strengths and weaknesses of our workshops, and identified effective teaching methods for student learning. For ethical considerations, we refrained from recording names of the students who responded to our questions and avoided taking pictures of the students' faces. Students were also not forced to participate if they were uninterested or uncomfortable during our activities.

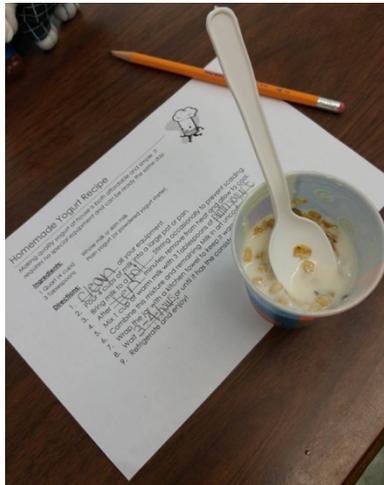


Demonstration for the Food Guessing Game.

Results:

The first workshop began with some quantitative questions assessing the students' knowledge summarized in Table 1. The main component of the workshop was a food guessing game, where students were supposed to guess the food item on a piece of paper they

received and decide its respective food group. Following the game, students filled out a worksheet identifying the food groups in their lunch. Lastly, students gathered in groups to construct a dairy system diagram, which complemented their recent visit from the BC Mobile Dairy Classroom. The students' responses to the qualitative questions are shown in table 2. We observed variances in the students' knowledge on food. During the food guessing game, some gave details on the food or its food group, while others showed little knowledge. When constructing the food systems diagram, we helped them brainstorm since some students struggled with identifying inputs and outputs.



Yogurt samples and a fill in the blank recipe.

great interest on the yogurt making process by asking questions such as “Can they use flavored yogurt at yogurt starters?” or “How long does it take for the yogurt to set?” Of the entire class, only one student demonstrated knowledge on vitamins and minerals.

The second workshop began with a qualitative question asking students what they learned during the previous workshop. Responses are summarized in Table 2. Retained knowledge from the first workshop revealed the effectiveness of our teaching methods. Activities for the second workshop included a fill-in-the-blank yogurt recipe worksheet, yogurt samples, a small lecture about nutritional benefits of yogurt and a food bingo game. The students showed



A student playing food group bingo.



Presenting the steps and materials required for yogurt making.

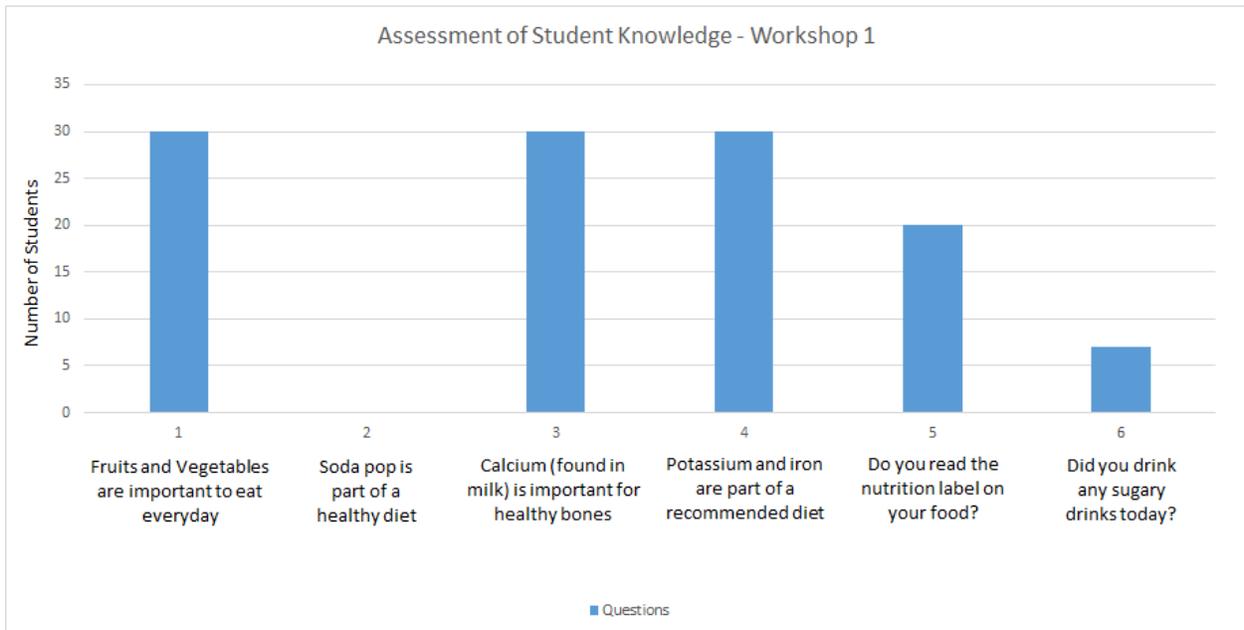


Table 1

Qualitative Questions	Workshop 1	Workshop 2
Which part of the workshop did you like the most?	<ul style="list-style-type: none"> • alternatives to cows milk • lentils are in the meat and alternatives food group 	<ul style="list-style-type: none"> • Bingo • Eating yogurt
What was one new thing that you learned today?	<ul style="list-style-type: none"> • alternatives to cows milk • lentils are in the meat and alternatives food group • Food groups game • Dairy systems diagram • Everything!! 	<ul style="list-style-type: none"> • how to make yogurt • the nutritional benefits (Vitamin D & calcium) of yogurt • what probiotics are
What is something you learned in workshop 1?		<ul style="list-style-type: none"> • Food groups in general <ul style="list-style-type: none"> ◦ Milk & alt. ◦ Legumes/nuts • Dairy system

Table 2

Discussion:

1. Are some methods of teaching more effective than others at introducing food literacy?

To answer our first question, we incorporated various interactive activities (e.g. taste testing, food bingo, food matching game, etc.) in combination with lecture-style teaching about nutrition and food groups. We introduced the different food groups in a game format and asked the students to categorize their lunch items. According to Table 2, students learned that lentils fall

under the “Meat and Alternatives” section, which was covered during the interactive food matching game. However, some struggled to fill in the food categorizing worksheet during the lecture style learning. Most students did not ask questions or seek help until we personally asked them. This is significant, as it suggests that students may be reluctant to ask questions despite their uncertainty during lecture style learning. However, during interactive learning experiences, they are more likely to voice their opinions and uncertainties. Asking students to guess the yogurt-making steps during the recipe fill-in-the-blank activity was a great way to trigger discussion and critical thinking. When asked the qualitative questions (Table 2), the students’ responses had a higher correlation with the interactive learning portions compared to the lecture components of each workshop.

2. Did the student benefit from these workshops?

The students seemed to benefit from the workshops. They learned about different food groups and some nutritional benefits of yogurt. Knowledge from the first workshop was retained and revealed during our second workshop two weeks later. In the second workshop, students learned how to make yogurt (which they also tasted) and took the recipe home. We hoped they would share this new information with their families. In addition, they developed an appreciation for food through activities such as food bingo, reducing the “boring” stigma around healthy food. This is crucial for developing healthy eating habits as they approach adolescence.

3. How does student engagement and involvement differ across the different styles of workshops?

We observed that students enjoyed games and other engaging activities the most. Information retention was higher in this portion of the workshop. In the taste testing activity, all students were keen to try the homemade yogurt and asked questions and provided suggestions, such as

adding fruit to yogurt to counter the sourness. In the fill-in-the-blanks recipe, students were very cooperative and enthusiastic to volunteer their guesses. This engaged the students more than the lecturing method. The noise level was more manageable during times of critical thought. Students were very energetic during the lecture components, as they just finished participating in an interactive game. We recommend prioritizing student engagement when designing activities, but to keep them short and precise.

In Ernesto Sirolli's (2012) TED talk, we learned that in the course of collaborating with others, communication is key, which was something we experienced first hand. When we first met our community partner, he informed us that his class had limited exposure to food literacy. We were unsure of what was expected of us and how to approach teaching students about food literacy. However, after talking to our partner and teaching team, we developed a better sense of direction for our project. Community asset development is built by listening our partner's needs. To address the food literacy issue, we must first listen to those affected, because no one knows better than the people who are experiencing the situations first-hand (Sirolli, 2012).

In the podcast where Eduardo's ethical way of obtaining Foie Gras was told, it suggested that failure is unavoidable (Glass, 2011). We sometimes face difficult situations that we must overcome. In our process of planning the workshop material, we faced multiple challenges such as the class changing the novel we hoped to incorporate into our workshops, infrequent communication with the teacher, and the limitations of yogurt making. We were inspired by the Dan Barber's persistence and determination to introduce Eduardo's Farming method to New York (Glass, 2011). Although we did not manage to do the yogurt making demonstration for the students, we successfully incorporated taste testing by making a batch prior to the workshop, which resolved the excitement and anticipation of the students.

Our findings determined that our workshops helped students learn and retain new knowledge. Secondly, we found that students enjoyed hands-on learning, especially in the form of games. This suggests that designing games with educational purposes can help introduce new material, and is a great way to enhance student engagement. Last but not least, combining a variety of learning styles in workshops may be the most beneficial in regards to knowledge retention and material absorption.

One limitation was the diverse student backgrounds and varying understandings of nutrition. During the initial assessment, we asked questions to see the general understanding of nutrition (Table 1). However, some students may have raised their hands due to peer influence, misrepresenting their knowledge level in the poll. Another limitation may be during class discussion or open-ended questions, students may have been reluctant to answer or showcase their opinions, due to audience inhibition. Students may have felt uncomfortable to share their knowledge with fellow classmates. On the other hand, some students struggled to express their ideas tangibly while writing down their meals possibly due to spelling uncertainty or misunderstanding concepts. Attention span was also a limitation, as some students struggled to focus on assigned tasks.

We recommend the following for future workshops: First of all, an alternate activity to yogurt making would be ideal, as the time required for yogurt fermentation was not feasible for the class due to the lack of time and resources. Secondly, games or activities stimulating high energy in children should be saved for the end of the workshop to maintain focus. Keeping activities short and precise may also maintain focus and noise levels, as young students have a shorter attention span. Try to avoid complicated food items during initial activities to avoid confusion. We also strongly recommend preparation of backup activities in case of extra time

(although we did not experience this) and to incorporate take home activities to ensure knowledge retention and to encourage parental involvement. Finally, we recommend having three shorter workshops which may be more beneficial to the students due to their short attention span.

Conclusion:

Our project has taught us a great deal about teaching elementary school children. Our students' enthusiasm made our project fun to implement. The educational games we incorporated into our workshops were also very well received by the students and they eagerly participated. This taught us that the hands-on approach to our workshop was able to help the students learn and retain information about basic nutrition. Throughout the time spent with the children, they seemed to show a genuine interest in food literacy by asking questions, which showed their high levels of comprehension. Having cooperative and caring students who were interested about healthy living made our project a rewarding experience for all of us.

Critical Reflections

"H"

Our CBEL project was a very positive experience for me, and a highlight of LFS 350, and the LFS course series. The flexibility of our community partner and our group made this an enjoyable project as we were able to tailor our project to suit the students needs as well as use our strengths to the best ability. One additional flexible learning day would have allowed our group to present an additional workshop which I believe would have been very beneficial for the students. Our group worked very well together, and that made this project even better! The actual workshop was a lot of fun for me personally and I could see that the students and the teacher had

fun as well. As a future dietitian I will be presenting workshops on nutrition for the rest of my career, so this was a great project for me to see what types of activities enhance learning around food and nutrition. The most challenging aspect was transitioning our vision for the project to fit the criteria outlined in the assignments, however with teamwork from our group, and the teaching team this challenge was overcome. The online components complemented each week's theme as well as the stages of our CBEL project.

“H”

I had a very enjoyable experience with our particular CBEL project. Although challenging, I think that the whole process is actually very practical for our future careers, whatever that may be. The practice of proposing what we would like to address in our project, planning the actual workshops as well as executing them, and reflecting on our progress while updating (both in person and online) the members involved in the project helped me further develop many important and critical skills. Compared to the CBEL project in LFS 250, we were given much more independence and therefore had to do a lot more planning and decision making. Our group has a very good group dynamic and was able to figure out what we wanted to accomplish although we were quite confused at first. LFS 350's CBEL project allowed for a learning experience that was challenging and pushed us to step out of our comfort zone, which I believe was one of the goals. I also think though that the project was easy, in a sense, because we weren't on our own; we had TA's and professors that helped us along the way. Overall I think this project was a nice stepping stone that will help all of us in the future and I am very thankful that I had the chance to participate in a group that works so well together.

“A”

Participating in the CBEL project gave me insights on how my position takes part in my community whether is of now or the near future. In comparison to LFS 250 where the project just handed to us with most of the plans already set up, I think CBEL project gave the students a chance to take a close look into the various current issues regarding our community food system and take initiative on making positive changes to it. We were able to communicate with our partner and plan or adjust the plans accordingly to fulfill our partner's needs, which to me, the whole process gained my independence and critical thinking skills. Rather than being in any required courses that I must take, the experience of the CBEL project and the course itself was enjoyable. There were hardships that our group faced such as the struggle on determining our project's objectives and the overall expectations (from our partners and ourselves) that we wanted to achieve near the beginning of the term. However, I am very grateful for our group being able to overcome the obstacles by demonstrating cooperative teamwork where each member was supportive of one another.

“J”

In the beginning, my expectations for our project were different compared to the outcome. Initially, we were expecting to conduct workshops specifically on dairy. However, our community partner was a lot more lenient with this and seemed to show interest in having our workshops be on general nutrition instead. Having this flexibility for our project made the process of constructing our workshops a lot more enjoyable, as it gave us the opportunity to try out different ideas and to exercise our creativity. It was helpful to have the flexible learning

sessions outside of class as well, as it gave us time to work on the quality of our workshops and to bond as a group.

Having minimal experience in constructing workshops before, I found this to be a valuable learning experience. Being a nutrition student, it was important for me to get experience with teaching, as my future careers may involve similar skills. I think something I found most challenging was coming up with ideas for workshops, as I didn't know what methods would be most meaningful and interesting for the students. However, as a group we decided to incorporate various activities within our workshops, which seemed to be the most effective way to reach out to the students.

I was surprised to see how much some students knew in regards to nutrition. However, there were still varying levels of knowledge within the classroom, which taught me first hand how students could benefit from incorporating food literacy into their curriculum.

“J”

Going into an elementary school and teaching young students about nutrition was an amazing experience for me. I've always enjoyed working with children, as they were so creative and lively. They also made me reflect my role as someone they look up to, someone knowledgeable, or someone with experience. Our previous project in LFS 250 also gave us a chance to be involved in the classroom, however this CBEL project in particular was a little more challenging, as we had to plan our project ourselves, as opposed to everything being planned for us in the bread making workshop last year. This project was also much more flexible, my group and I were able to incorporate what we think would be beneficial and fun for the students in the workshop, such as the food bingo and food matching game. In regards to

other components of the learning experience, for example, the group bonding/ discussion time, blog posts, other resources available for the workshop planning, and ideas from lecturers and TAs, they were all very helpful in terms of the development of the project. I very much valued the experience of expressing our thoughts and the progress through blog posts, I think it's a great way to communicate any findings and concerns to the TAs and lecturers. However, I think these blog posts may also be challenging at times because of the specificity of the structure and sometimes ambiguity in the rubric. I felt my fellow classmates might enjoy it more if it were more flexible itself. But nonetheless, I still think it's valuable. And the community visits are also very great portal to learning what the community partner needs. I am very grateful for my fellow group members as our group dynamic worked very well and I enjoy working with them!

“C”

My experience with LFS 350 and the community based experiential learning project was very rewarding. We lucked out and had a great class of middle school students who were both smart and enthusiastic. As well, my group was organized and worked well with one another. Both of these helped tremendously, and made our project quite enjoyable. I learned a lot about how to engage middle school students. As well as how to develop workshops intended to reach a wide range of learning styles. The challenges we faced were ones which helped us learn how to work in a group better. Working with middle school students can be quite difficult because of their high energy level and lack of attention. However their enthusiasm was a good thing because we had no problems with lack of participation. As well their attention span was something we were aware of before our first workshop so we were able to plan for it.

Doing the outside research into the topic of food literacy also proved to be a challenge. Undertaken at the individual level, we each had to write papers which corresponded to our project. My background is not in food literacy or nutrition, rather it is in growing food. So it was a bit of struggle to delve into some of the literature because I had no clue where to begin. The online tutorials aided me throughout the research process and helped me to find articles which related directly to our project.

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