

Flexible Learning Project Completion Report

Report Completion Date: July 30, 2015

1. PROJECT OVERVIEW

1.1. General Information

Project Name: 2013FL1_LFS_FNH_Madadi-Noei

Principal Investigator: Azita Madadi Noei

Team Members:

Azita Madadi Noei, Lecturer, Food, Nutrition & Health: Content expert of the course, oversaw video production and guided student assistant

Judy Chan, Sessional Lecture, Food, Nutrition & Health: Guided the research and development of a concept inventory

Members of Advisory Committee, offering advice on aligning the course with FNH program:

- Christine Scaman, Associate Professor, Food, Nutrition & Health
- Eunice Li-Chan, Professor, Food, Nutrition & Health
- Nooshin Alizadeh-Pasdar, Sessional Lecturer, Food, Nutrition & Health
- Cyprien Lomas, Assistant Dean, Learning Technologies, Land & Food Systems, offered advice on uses of learning technologies in FNH 200
- Gwen Chapman, Professor and Program Director, Food, Nutrition & Health, offered advice on align the course with rest of LFS

Project Initiation Date: July 01, 2013

Project Completion Date: July 31, 2015

1.2. Project Summary

Leveraging technologies to develop engaging course resources to deepen understanding of course materials by a diverse student population and course instructors of FNH 200.

1.3. Student Impact (Table 1.2) - *Please fill in the following table for the period of time when your project was active. [Note: Adapt this section to the context of your project if this table does not capture the nature of it].*

FNH 200 921, May 2013, 150 students (Full)

FNH 200 98B, May 2013, Distance Education, 50 students (Available for Use)

FNH 200 942, July 2013, 120 students (Full)

FNH 200 101, September 2013, 170 students (Full)

FNH 200 99A, September 2013, Distance Education, 100 students (Available for Use)

FNH 200 102, January 2014, 170 students (Full)

FNH 200 103, January 2014, 170 students (Full)

FNH 200 99E, January 2014, Distance Education, 50 students (Available for Use)

2. PRODUCTS AND ACHIEVEMENTS

2.1. Products and Achievements - Please *update* the project products and achievements as necessary and indicate the corresponding implementation date [Examples: 10 online interactive lecture modules (SEPT-DEC 2013); A fully flipped course (JAN-APR 2014); Piloted two-stage midterms and final exam (SEPT-DEC 2013)]. Also please indicate the current location of such products [Examples: Department website, Connect, shared workspace, etc.].

Table 2.1 – Products and Achievements

Product(s)/Achievement(s):	Implementation Date:	Location:
Re-editing of 9 class videos	2015 - January Term	Copies of the videos are kept on hard-drives (with the instructors and the Learning Centre) and Connect
Creation of conceptual screencasts	Piloted 2015 - January Term	Copies of the videos are kept on hard-drives (with the instructors and the Learning Centre) and Connect
Concept Inventory	2015 - January Term	Electronic copies are shared among instructors

2.2. Item(s) not Met - Please list all of the intended project products and achievements that were not attained and the reason(s) for this.

Table 2.2 – Item(s) not met

Item(s) Not Met:	Reason:
Pool of meaningful teaching techniques and ideas to be shared among course instructors to create an engaging 'flipped' classroom environment	Through this project, communication among instructors increased and we constantly discussed about our teaching practices, recognized pros/cons and gaps and differences in our teaching

	<p>preference. We had not created a ‘pool’ or a shared document.</p> <p>We feel that this is a continuous process and needs to be recognized as part of our teaching responsibilities as concurrent-instructors of FNH 200.</p>
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4. PROJECT SUPPORT – *Please provide feedback on the support you received during the life of your project, as applicable. Did the received support meet your needs and expectations? What can you recommend to improve the support process?*

1. Video Content and Screencast - Our student assist received support from the Learning Centre at LFS.
2. Concept Inventory - CTLT connected us with experts in Biology as well as appropriate resources.
3. Flexible Learning Pedagogy Survey - CTLT connected us with Research and Evaluation Analyst at the Office of VP-Student to conduct formal evaluation on the implemented teaching tools.
4. Budget allocation was rigid in the beginning. Though there was increased flexibility on how budget can be spent or reallocated, the exact process on how the budget can be used and the reallocation approval process was unclear.

5. PROJECT EVALUATION

5.1. Project Outcomes (Table 5.1) - *Please list the intended outcomes or benefits of the project for students, TAs and/or instructors. Also include the indicators used to guide your evaluation, and what constitutes your project’s success.*

Table 5.1 – Evaluation and Indicators

Intended Outcomes (e.g., increased active in-class participation)	Indicator(s) (e.g., number of students participating in class; quality of the interventions)	What constitutes “success”? (e.g., larger numbers of students participating in class; greater integration of content in their comments/questions; 10% attendance increase)
1. Increased engagement	Improved and updated video allowed students to focus on the scientific content of the	Less students commented on the outdated aesthetic quality of the video

	video instead of aesthetic quality of the video	Screencasts also allowed students to preview and review important 'lecture' materials whenever needed.
2. Baseline data	The concept inventory allowed instructors to gather baseline data at various point during the term.	

5.2 Data Collection and Evaluation Methods - Indicate your evaluation methods including who was responsible for the evaluation. Please describe the data collection strategies used, how the data was analysed, and perceived limitations. **Note: Please attach copies of data collection tools (e.g., surveys and interview protocols), any additional data or other relevant items.**

Please see three attached evaluation tools:

1. Midterm course evaluation
2. Food science concept inventory
3. Student perception survey

Mid-course evaluation and discussion board on Connect specifically designed to gather feedback on tools developed. Individual instructors reviewed feedback.

Flexible Learning Pedagogy Survey was conducted in 2014 November in FNH 200 101; then again in 2015 March for both FNH 200 102 and 103. Analysts from VP-Student Office supported the data gathering and analyses.

Concept Inventory was validated during summer of 2014 and implemented in 2015 Winter terms.

5.3 Evaluation Results/Findings - Explain to what extent your intended project outcomes or benefits for students, TAs and or/instructors were achieved or not achieved. You are encouraged to include both graphical representations of data as well as scenarios or quotes to represent key themes.

The concept inventory will become a very valuable tool to gather baseline data on students' knowledge and misconcepts on food science concepts. It will be valuable as a longitudinal tool.

Impact on Students: Please refer to attached survey results on students' feedback on the effectiveness of video.

Impact on instructors:

“The concept inventory will serve as a tool to help me reflect on my teaching practice and further improve my teaching practices.”

“Glad to have an opportunity to have regular, ongoing discussion with fellow instructors on our teaching practices, beliefs and values via this Flexible Learning project. This is a rare opportunity for a sessional instructor.”

5.4 Expected Long-Term Impact – *If applicable, indicate the impact your project is expected to have in this and/or other courses beyond completion.*

Table 5.2 – Expected Long-Term Impact

Course(s)	Number of Sections	Annual Enrollment
FNH 300	1	70
FNH 301	1	80
FNH 309	1	70
FNH 313	1	70
FOOD 510	1	18
FOOD 524	1	15

5.5 Dissemination – *Please provide a list of scholarly activities (e.g., publications, presentations, invited talks, etc.) in which you or anyone from your team have referred this Flexible Learning project. Include any dissemination activities you intend to accomplish in the future.*

Do we need to teach in harmony? Developing a food science concept inventory to measure learning effectiveness and fine-tune our teaching practices
 Nancy Ross (University of BC), Azita Madadi Noei (University of BC), Judy C. K. Chan (University of BC)

6. DISCUSSION, RECOMMENDATIONS AND CONCLUSIONS - *Reflect on the broader implications of the project. Indicate instances where your project has impacted courses or individuals not identified in your proposal. Include any recommendations you have for future Flexible Learning project leads.*

6.1. Teaching Practices – *Please indicate if your teaching practices have changed as a result of your Flexible Learning project. If so, in what ways? Do you see these changes as sustainable over time? If not, why do you think that is the case?*

The developed tools help the students to have access to different resources prior to coming to the class and using the class time for more in-depth exploration and discussion. They also and bring in flexibility to accommodate different learning styles

We intended to develop tools that are sustainable, through regular maintenance and technological modifications will be needed to meet the needs of students.

The tools we implemented are tools we had wanted for a long time. We appreciate having the opportunity, funding resources, and pedagogical expertises available through the FL project. We were able to develop and implement these with strong support.

The most important aspect of this project is the opportunity to engage with the teaching team and associated colleagues in the discussion of the course design for this introductory course in food science.

6.2. Student Involvement in FL team – *Were there any undergraduate or graduate students involved in the development and/or evaluation of your FL project? Please describe their contributions and overall experiences as part of your Flexible Learning team.*

In addition to providing feedback on newly implemented teaching tools as part of the FL Pedagogy Survey and SEoT, a few students were more involved than the general class population:

An undergraduate student (3rd year Food Science Major) was hired as a student assistant to update content of the course video.

Students enrolled in the summer 2014 sessions were invited to focus group discussion for the development of the concept inventory. During the discussion, they expressed appreciation for having the opportunity to contribute to the overall course improvement.

7. PROJECT SUSTAINMENT - *Please describe the sustainment strategy for the project components. How will this be sustained and potentially expanded (e.g., over the next five years). What challenges do you foresee for achieving the expected long-term impacts listed above?*

When developing the teaching tools, instructors of FNH 200 have been communicating closely with each other to build sustainable and transferrable tools. We are committed to continue our teamwork, share our approaches.

We anticipate that new technologies will continue to emerge. We wish that there will be ongoing support from CTLT to help us keep up with the latest technologies and pedagogical trends.

FNH 200 Concept Inventory Pilot Survey

Please do not your name on the survey. Circle the best answer. Thank-you for your participation.

1. Why do dairy processors homogenize milk?
 - A Milk tastes better and off flavours are prevented.
 - B The milk is safer to drink.
 - C The butterfat in the milk stays in solution.
 - D Butterfat is not soluble in the liquid portion of the milk.
 - E The milk has better colour and appearance.
2. Why does an oil and vinegar salad dressing separate?
 - A Oil is lighter and floats to the top.
 - B Oil and vinegar have different densities.
 - C Oil and vinegar are not soluble.
 - D The ratio of oil to vinegar in the dressing prevents even mixing.
3. Some examples of fermented foods include bread, wine, soya sauce and cheese. Which of the following statements best describes fermented foods.
 - A During fermentation the bacteria destroys the harmful components of the product.
 - B Fermentated foods are a traditional process to preserve food.
 - C Properly fermented food products will not contain any harmful components.
 - D Fermented foods do not require the use of preservatives.
4. The Food and Drug Regulations has a list of food additives that may be added to food. Why are emulsifiers added to food?
 - A They change mouthfeel of product.
 - B They keep oil and water dispersed.
 - C They contribute to brown or golden colouring.
 - D They prevent food from spoiling.
 - E They thicken the food product so it does not separate.
5. Why is sugar added to fruit when making jam?
 - A Make it last longer without spoiling
 - B Maintain the colour of the fruit
 - C Make the jam thick
 - D Make the jam taste more fruity
 - E Lower the cost of making jam

6. Which of the following is not a reason to add a food additive by a food processor
- A To maintain or improve food safety or freshness.
 - B To provide quality attributes.
 - C To maintain or improve nutritional value.
 - D To improve taste, texture or appearance.
7. Which of the following is not a processed food?
- A A sports drink with added vitamins, minerals and caffeine
 - B Milk fortified with Vitamins A and D
 - C A cooking oil with an antioxidant
 - D Flour enriched with iron and B vitamins
8. A salad vinaigrette is made with oil and vinegar. Mayonnaise is made with oil, vinegar and egg yolk. Why do they appear so different
- A The egg yolk thickens the mayonnaise and gives the pale yellow colour.
 - B The method for making mayonnaise ensures the fat globules are small.
 - C They are a different types of mixtures.
 - D They are different types of emulsions.
9. Any chemical that's added to food to keep it from spoiling is a preservative. Which of the following is not a preservative?
- A Sugar
 - B Sodium Benzoate
 - C Potassium Sorbate
 - D Hydrogen Peroxide
 - E Acetic Acid
10. Which of the following food products is most likely to be associated with food poisoning caused by *Clostridium botulinum*.
- A Boiled rice
 - B Roast chicken
 - C Canned tomatoes
 - D Canned sweet corn.



FNH 200 (102) performs well regarding student satisfaction and experience with in-class videos with 70% or more indicating they were satisfied overall with this teaching practice (75%) and that in-class videos were effective in supporting their learning (72%).

A UBC benchmark is not available for this teaching practice.

In-Class videos	Food, Health and Nutrition	
	Strongly agree \ Agree %	Strongly disagree \ disagree %
Thinking about <u>in-class videos</u> in FNH 200 to what extent do you agree or disagree with the following statements about the course(s)?		
I was satisfied with the in-class videos in the course(s)	75%	9%
The in-class videos were effective in supporting my learning	72%	1%
The in-class videos enhanced my learning more	67%	1%
I was satisfied with how the in-class videos worked as a technology in the course(s)	69%	3%
The in-class videos got me to engage deeply with the course material	60%	1%