Sustainability Projects Fund
McGill Office of Sustainability (MOOS)
1010 Sherbrooke St West, Suite 1200
Montreal, Quebec H3A 2R7

Fonds des projets durables
Bureau du développement durable
1010, rue Sherbrooke Ouest, Suite 1200
Montréal (Québec) H3A 2R7

SP0123 Final Report

Please answer the following questions and return the completed form to the SPF Staff via e-mail.

Project Title: Sustainability Faculty Fellows

Final Report prepared by: Eva Dobler

E-mail: eva.dobler@mcgill.ca

Actual Project Start Date: 2/12/2014 **Actual Project End Date: 5/11/2016**

1. Please summarize the project and its key accomplishments in 1-2 sentences.
(400 characters maximum)

Joint project between MOOS and Teaching and Learning Services (TLS) to explore integrating sustainability into the undergraduate experience. This pilot project was launched with faculty and students from Faculty of Agricultural and Environmental Sciences (FAES) and Department of Integrated Studies in Education (DISE).

2. Did your team achieve your project's goal? In your answer, please describe the impact your project had on McGill's structures, processes, and/or systems. Also, please specify how this positively transformed people's behaviors/perspectives/habits on McGill campus(es).
(Unlimited characters, suggested minimum ½ page or approximately 250 words)

The goal of this project was to transform approaches to teaching within coursework so all McGill students, upon completion of their degrees, will be engaged citizens with the knowledge, skills, and perspectives necessary to address the goals of Vision 2020 and the grand challenges of the 21st century. As a first step in this direction, we created one learning community whose members took an inquiry-guided approach to discovering how best to integrate sustainability into courses and/or programs. Our key milestones were:

- Established a learning community made up of faculty, students and staff
  – Held monthly meetings on both campuses from December 2014 - May 2016;
  – Created networking opportunities for faculty and students;
  – Developed a shared understanding of learning outcomes related to sustainability;
  – Integrated the expertise of individual members by documenting their approaches to integrating sustainability into the undergraduate experience. We gathered the information through one-on-one interviews and created a summary document which we shared with the group and then discussed.
- Conducted background research
  – Held consultation process to glean lessons learned from other faculty learning communities on campus;
  – Created a summary doc of discipline-specific approaches to inquiry-guided learning at McGill and elsewhere;
  – Investigated inquiry-guided learning as an approach to institutional development (sub-group attended Inquiry as a Way of Learning Institute at Emory College, April 2014);
  – Created a summary document of key sustainability issues of relevance to higher education – both in terms of content and instructional strategies;
  – Developed a benchmarking report focusing on initiatives that linked teaching, learning and sustainability (mostly focusing on G15 institutions).
- Shared our learning with the community
  – One of members wrote a blog post about the learning community: \https://teachingblog.mcgill.ca/author/lowlyplanktoneer/
  – A video was created for the SPF: https://www.mcgill.ca/sustainability/sustainability-faculty-fellows-sp0123
  – TLS hosted a university-wide symposium where we started a conversation about learning outcomes related to social, economic and ecological responsibility and how they can be translated into actual learning experiences for

McGill students. This learning community acted as incubator for ideas and strategies for this event. https://teachingblog.mcgill.ca/2016/01/21/teaching-whats-important-symposium-highlights/#more-1410

3. Please describe the key successes and challenges of your project. (Minimum of two examples for each)
(Unlimited characters, suggested minimum ½ page or approximately 250 words)

Key successes - Joining two units from two different faculties together; having a student prepare resources before the first meeting; having an official launch meeting that was longer than the others, having individual interviews with each member of the LC to hear their stories.
Key challenges:
- Organizing regular meetings for a group with members from Mac campus and the downtown campus was way more difficult than expected.
- Originally, we would have liked to have an actual product by the end of the project, i.e., a resource for other instructors at McGill like a wiki or a database but the group never reached a consensus about what this resource should look like within our given timeline.

4. What key points of advice or *lessons learned* would you give to other SPF teams either regarding your experience managing your project or the project itself?
(Unlimited characters, suggested minimum ½ page or approximately 250 words)

This project has once more shown that learning communities are a promising strategy to change perspectives and create lasting change. The semi-formal setting and the joint goal encourage a sense of community among students and faculty members from different disciplines. As a result they start listening to each other and reflect on their context and the context of others. The recurring meetings provide continuous support as members engage in self-exploration, reflection and mutual learning. Inquiry-guided learning, our chosen conceptual framework, often requires a certain patience from project managers but really gets buy-in from faculty members who love to explore and would not be willing to accept ready solutions or advice from outsiders—and rightly so. Nobody knows their context like they do, and they are the ones who have to implement new strategies and deal with the consequences, good and bad. However, the learning experience often differs significantly from the teaching experience, and having student participants proved invaluable as they were always ready to provide a much needed reality-check. Not only did this approach make use of the collective expertise in the group, it allowed members to take charge of their own learning process, create a small network of like-minded people and hopefully encouraged them to continue their valuable work beyond the life-span of this project.
While I stated above that some things cannot be rushed, we were able to implement some lessons learned from previous projects and speed up the process. Here are some recommendations for anyone thinking of using this approach:
(a) Look for the right people. While it depends on your context and your goals who the "right" people are, we recommend to find two or three people who are really interested in the project and who can in turn recommend other people. Don't be afraid of sceptics. One or two sceptics can strengthen the group and the quality of the outcomes. Too many sceptics will impede progress. Don't hesitate to include people who have no knowledge in the topic of the group. Once on the bandwagon, they can become your biggest champions. Make sure to include at least one person who is in a strategically important position (e.g., someone working in a Dean's office or a member of Senate).
(b) Do your research. Make sure you're not reinventing the wheel and advance your starting point as much as possible. Do some benchmarking before the first meeting. Spend time on a literature review that you can present to the group at the beginning of the project. It gives you credibility and helps bring everyone up to speed regarding the topic of your project.
(c) Make the launch count. The first meeting with the group sets the tone. Do your utmost to find a time that works for everyone and strongly encourage them to attend. Create a friendly atmosphere, allow people to get to know each other. Academics are used to formal meetings, a competitive environment and endless committee meetings with no results. Be explicit about the goals of the project, present the results of your research and create an activity that allows them to get familiar with the topic and each other. Give concrete examples for possible outcomes. Provide lots of space for feedback and input at every stage. Be prepared to change your plans based on their input.
(d) Create a common language. Sustainability means very different things to different people. The same is true for

words like “research” or “participation”. During the launch, start working on a common language. Make sure you all talk about the same things.
(e) Meet regularly. At the beginning of the year, schedule monthly meetings for the entire year. Regular meetings are important to keep the momentum and make progress. They are also important to develop and nurture the sense of community that is necessary if you want participants to openly reflect and share their experiences.
(f) Ask for feedback. At the end of meetings, ask for their feedback. After a few meetings, take at least 30min during a meeting where everyone can reflect on what they wanted from this group and whether they are satisfied with their experience so far. Ask them what works and what doesn’t. Take their feedback seriously. Collect it, analyse it, bring it back to them together with a plan of action on how you intend to follow up on their suggestions

5. What recommendations do you have for the future of this project to be continued and are there any opportunities for complementary projects? Who will take responsibility for the project’s future and how can interested persons be in touch?
(Unlimited characters, suggested minimum 1 paragraph)

To close the project, we held a roundtable lunch with some key stakeholders on May 11, 2016 to draw others into the conversation and inspire them to take action. This group included two associate deans from FAES, the directors of MOOS and TLS, and the Deputy-Provost SLL.

6. In your application, you listed the following sources of funding: None Listed

Please confirm if you received this funding in the space below. In your response, please list the actual amount (in dollars) that you received. Note: If you received funding from a McGill Department or Unit, please attach a letter from its Financial/Budget Officer confirming the actual amount of support.
(1,800 characters maximum)

7. Did you purchase equipment or make an installation on campus? ☐ **Yes** ☒ **No**
If yes, please briefly describe how these items will be maintained and used in the future.
(1,800 characters maximum)

8. At the beginning of your project, you submitted a work plan or impact metric that included target measurables or indicators of your project’s success (e.g. # of tons of GHG emissions reduced). Please pick 3 indicators that best showcase the success of your project and complete the table below. To share updates on other indicators that you set, please attach an appendix to this report.

Selected Key Success Indicators	Target #	Actual #
Members recruited for Learning Community (faculty and students)	12-24	15
Background research (institutional, educational and government research)		done
Communication plan: communicate key learning outcomes and strategies to the community		done

If there is a significant difference in the target numbers and the actual numbers achieved, please explain. If you have any additional information to share about these success indicators, please also include it below.
(1,800 characters maximum)

Since our success indicators are all qualitative in nature, it is difficult to communicate them in this form; for more info on success indicators please see (2) above.

9. Please complete the table below for the Standard SPF Key Success Indicators, if the data is available.

Standard SPF Key Success Indicators	Actual #
# of volunteers directly or indirectly engaged in the project	15
# of people (student, staff, or other) trained in the context of the project	19
$ raised for project activities subsequent to SPF funding	0
# of partnerships or collaborations developed between the project team and other McGill administrative units, student groups, community groups, other universities, and/or other groups/organizations.	

Regarding the last Key Success Indicator, please list the groups and/or organizations that you counted.
(Unlimited characters; point form acceptable.)

If you have any additional information to share about the Standard SPF Key Success Indicators, please include it below. (1,800 characters maximum)

10. Please rate your project team's overall satisfaction with the support provided by the SPF Staff. Choose only one response.

☐ Very Dissatisfied ☐ Dissatisfied ☐ Neither Satisfied Nor Dissatisfied ☐ Satisfied ☒ Very Satisfied

11. Please provide any feedback or recommendations regarding your team's experience with the SPF.
(Unlimited characters, suggested minimum 1 paragraph)

I think the whole reporting process (budget, key indicators, interim reports) is very complicated, but it has improved significantly in the past year. Thank you for all the support!

12. If there is additional information you would like to share about your project, please use the field below.
(Unlimited characters)

13. Has involvement in this SPF project positively impacted your team in the area of professional growth? Please choose one. If you would like to elaborate, please use the field below. (800 characters maximum)

☒ Yes ☐ No ☐ Prefer Not to Share

14. Has involvement in this SPF project positively impacted your team in the area of personal growth? Please choose one. If you would like to elaborate, please use the field below. (800 characters maximum)

☒ Yes ☐ No ☐ Prefer Not to Share

15. Which of the following skills or attributes has your team improved through involvement in your SPF project? Choose all that apply.

☒ Budgeting ☒ Conflict Resolution ☒ Listening
☒ Communications ☒ Leadership ☒ Mentoring

- ☒ Negotiating
- ☒ Networking
- ☒ Planning
- ☒ Problem Solving
- ☒ Project Management
- ☒ Public Speaking
- ☒ Stakeholder Engagement
- ☒ Stakeholder Identification
- ☒ Systems Thinking
- ☒ Teamwork
- ☒ Technology
- ☒ Time Management
- ☒ Writing
- ☐ Other (Please specify in the field below)

Other: It was an amazing learning experience – thank you for this opportunity.

16. Since starting your SPF project, has your team improved its knowledge of sustainability? Please choose one. If you would like to elaborate, please use the field below. (800 characters maximum)

☒ Yes ☐ No ☐ Prefer Not to Share

17. (Optional) If applicable, please list the total number of team members voluntarily self-identifying as members of marginalized communities:

Please identify the represented communities below. (e.g. women, Indigenous people, people of colour, LGBTTQI, student parents, members of ethnic minorities, immigrants, people with disabilities)
(1,800 characters maximum)

Thank you for completing your Final Report!

Please e-mail your report to the SPF Staff attaching any additional information that you would like to share about your project (e.g. other reports, research, documents, photos, etc.). Please note that this Final Report will be shared publicly on your SPF project's webpage.

Sustainability learning communities 2014-2016

Description

Joint project between the McGill Office of Sustainability (MOOS) and Teaching and Learning Services (TLS) to explore integrating sustainability into the undergraduate experience.

Context

- Sustainability is already an important theme within the spheres of Operations, Research and Student Life at McGill. It has also emerged as an important force in the academic sphere, but it is generally relegated to specific programs or courses that only reach a limited number of students with a professed interest in this area.
- "ESD [Education for Sustainable Development] is about the learning needed to maintain and improve our quality of life and the quality of life of generations to come ... ESD enables people to develop the knowledge, values and skills to participate in decisions about the way we do things individually and collectively, both locally and globally, that will improve the quality of life now without damaging the planet for the future." [i]
- Coursework is the ideal avenue through which to reach all students at McGill.
- Determining how to integrate sustainability into coursework is a complex process and thus requires that instructors have the time and support necessary for designing or redesigning their courses and programs in ways that promote meaningful student learning in sustainability.

Project Overview

GOAL: Transform approaches to teaching within coursework so *all* McGill students, upon completion of their degrees, will be engaged citizens with the knowledge, skills, and perspectives necessary to address the goals of Vision 2020 and the grand challenges of the 21st century.

PROJECT: A network of learning communities (LCs) whose members take an inquiry-guided approach to discovering how best to integrate sustainability into courses and/or programs. Pilot project launched with faculty and students from *Faculty of Agricultural and Environmental Sciences (FAES) and Department of Integrated Studies in Education (DISE).*

Project members:

- TLS: Marcy Slapcoff, Eva Dobler
- MOOS: Kim McGrath, Lilith Wyatt (until April 2014)
- Students: Valérie Toupin-Dubé, Frédéric Rivard, Ying-Syuan (Elaine) Huang, Amanda Winegardner (Graduate Student Assistant, TLS); May Le (Education Intern, MOOS, until Sept. 2014)
- Faculty: Anila Asghar, Caroline Begg, Elena Bennett, Roger I. Cue, Mary Hendrickson-Nelson, George McCourt, Caroline Riches, Natalie Waters (until June 2015), Elizabeth Wood

Milestones

- Established a learning community made up of faculty, students and staff
  - Held monthly meetings on both campuses beginning in December 2014;
  - Created networking opportunities for faculty and students
  - Developed a shared understanding of learning outcomes related to sustainability;
  - Integrated the expertise of individual members by documenting their approaches to integrating sustainability into the undergraduate experience. This was done through one-on-one interviews.

- Conducted background research
  - Held consultation process to glean lessons learned from other faculty learning communities on campus;
  - Created a summary document of discipline-specific approaches to inquiry-guided learning at McGill and elsewhere;
  - Investigated inquiry-guided learning as an approach to institutional development (sub-group attended *Inquiry as a Way of Learning Institute* at Emory College, April 2014);
  - Created a summary document of key sustainability issues of relevance to higher education – both in terms of content and instructional strategies;
  - Developed a benchmarking report focusing on initiatives that linked teaching, learning and sustainability (mostly focusing on G15 institutions).

- Shared our learning with the community
  - Amanda Winegardner **published a blog post** by about her experience as member of the learning community: https://teachingblog.mcgill.ca/author/lowlyplanktoneer/
  - A **video** was created for the **SPF**: https://www.mcgill.ca/sustainability/sustainability-faculty-fellows-sp0123
  - TLS hosted a **university-wide symposium** where we started a conversation about learning outcomes related to social, economic and ecological responsibility and how they can be translated into actual learning experiences for McGill students. This learning community acted as incubator for ideas and strategies for this event. https://teachingblog.mcgill.ca/2016/01/21/teaching-whats-important-symposium-highlights/#more-1410

[i] Sterling, S. (2012) Framework for Future Fit. Retrieved May 5, 2016 https://www.heacademy.ac.uk/sites/default/files/future_fit_270412_1435.pdf

Selected materials from Sustainability Learning Community

Summary points from education for sustainability research

Learning outcomes and competencies related to sustainability

- The majority of literature related to learning outcomes and competencies in "sustainability", "sustainability education", "education for sustainable development" and "social responsibility" provides broad lists of knowledge requirements and skills. A remaining challenge with these lists is in identifying those unique to sustainability/social responsibility education as opposed to those desired for a general academic experience.
- Vaughter et al. (2013) and Wiek et al. (2011) articles summarize and provide a gateway to an enormous amount of literature on this topic.
- The most developed conceptual framework related to competencies in sustainability education (mostly for sustainability programs) lists five competencies: systems-thinking competence, anticipatory competence, normative competence, strategic competence and interpersonal competence.
- Gap in the literature in translating competencies to specific learning outcomes.

Pedagogical strategies related to sustainability

- Much of the literature on pedagogy in sustainability/social responsibility education is presented as single site case studies. More of these examples are available in addition to those presented in this annotated bibliography.
- A common pedagogical framework relating directly to the "key sustainability competencies" involves: bringing the world in, visiting the world, stimulating the world, and engaging with the world (e.g. see Brundiers et al. 2010).
- Experiential and service-learning are championed, but only with intentional practices, i.e. simply providing these opportunities is not always sufficient for learners to truly be engaged in sustainability education.
- Some of the available literature is split in opinion over whether the current post-secondary system has the capacity to transform educational institutions as opposed to promoting certain pedagogical strategies.
- Support for the integration of sustainability-related pedagogical strategies and curriculum content does not necessarily translate into support for learning about these processes.
- Formal education in ethics identified as a need to ensure long-term behavioural and cultural change amongst students who have participated in sustainability-related courses.

Overcoming administrative and knowledge challenges (Annotated bibliography available)

- Many researchers emphasize the importance of utilizing systems thinking and leverage points when applying sustainability to educational institutions, i.e. identifying points of contact and actions with the potential to inflict a large amount of change.
- Need better recognition for small-scale changes in the absence of greater institutional buy-in.
- Need to promote sustainability education as not just important for traditional "green professions" but for all university graduates.

Selected references

Brundiers, K., Wiek, A., & Redman, C.L. (2010). Real-world learning opportunities in sustainability: from classroom into the real world. *International Journal of Sustainability in Higher Education, 11(4)*, 308-324.

Vaughter, P., Wright, T., McKenzie, M., & Lidstone, L. (2013). Greening the Ivory Tower: A Review of Educational Research on Sustainability in Post-Secondary Education. *Sustainability, 5,* 2252-2271.

Wiek, A., Withycombe, L., & Redman, C.L. (2011). Key competencies in sustainability: a reference framework for academic program development. *Sustainability Science, 6,* 203-218.

Learning outcomes from the literature relating to sustainability/social responsibility

The literature on education for sustainability and social responsibility refers to learning outcomes, competencies and skills. Although there are nuances in the meaning of these terms, we feel they are equivalent for our purposes and can be used interchangeably. The information in this table is drawn from this literature, and is loosely organized into two columns. The first column "Overarching categories" refers to broad outcomes whereas the second column, "Examples" refers to outcomes related to cognitive, methodological and altitudinal processes and contains a higher level of specificity than level one. References are found below.

1. Overarching categories (See Note A below)	2. Examples (See Note B below): Students are able to…
Systems-thinking competence: "the ability to collectively analyze complex systems across different domains (society, environment, economy, etc.) and across different scales (local to global), thereby considering cascading effects, inertia, feedback loops and other systemic features related to sustainability issues and sustainability problem-solving frameworks" [1,2].	o Explain how sustainability relates to their lives and their values, and how their actions impact issues of sustainability[4] o Explain how systems (biological, environmental, social, governmental, economic etc.) are interrelated[4] o Translate what they know about sustainability to a world stage[4] o Talk about international, national, and local initiatives to protect and improve the natural and social environment[5] o Understand what impacts whether a local action can be applied to a larger scale[5]
Anticipatory competence: "the ability to collectively analyze, evaluate, and craft rich pictures of the future related to sustainability issues and sustainability problem-solving frameworks" [1,2].	o Analyze differing theories about economic, social or environmental development[5]
Normative competence: "the ability to collectively, map, specify, apply, reconcile, and negotiate sustainability values, principles, goals and targets…This capacity is based on acquired normative knowledge including concepts of justice, equity, social-ecological integrity, and ethics; as well as methods and methodologies such as multi-criteria assessment and structured visioning" [1,2].	o Define sustainability[4] o Reflect objectively on the models of individual behaviour and cultural patterns existing in society[5] o Detect cause/effect relationships in environmental issues[5] o Detect cause/effect relationships in social issues[5] o Explain the historical origins of current environmental concerns[5] o Develop and apply indicators for environmental problems[5] o Describe the beliefs, values, and attitudes that underlie relationships between people and their environment[5] o Identify the different schools of ethics that underlie environmental decisions[5]
Strategic competence: "the ability to collectively design and implement interventions, transitions, and transformative governance strategies toward sustainability. This capacity requires an intimate understanding of strategic concepts such as intentionality, systemic inertia, path dependencies, barriers, carriers, alliances etc." [2].	o Integrate various environmental dimensions (social, cultural, economic, political, aesthetic, physical and biological) when making professional decisions[5] o Distinguish between different forms of social and political organization and their influence on the resolution of environmental problems[5]
Interpersonal competence: "the ability to motivate, enable, and facilitate collaborative and participatory sustainability research and problem solving" [2].	o Work with people from other disciplines when resolving environmental issues[5]
Foresighted thinking: "an understanding that the actions we take	o Rationalize and justify possible solutions to environmental problems using varying schools of ethics[5]

today have consequences long into the future" [3].	o Design action plans to improve any process-product relationship from an environmental point of view[5] o Understand the consequences of my own decisions and actions and feel a sense of accountability[5]
Stakeholder engagement: "skills and resources to partake in collaborative decision making, mediate conflict among opposing perspectives, and negotiate diverse stakeholder interests while acknowledging different visions of the present, past and future" [3].	o Apply concepts of sustainability to their campus and community by engaging in the challenges and solutions of sustainability on their campus[4]
Action-oriented (and change-agency): "skills and confidence to take action and become active participants in shaping their future" [3].	o Utilize knowledge of sustainability to change their daily habits and consumer mentality[4] o Use "change agent" skills[4] o Build a personal environmental ethic based on sensitivity towards the natural and socio-cultural environment[5] o Recognize one's own beliefs, values, and attitudes with respect to environmental issues[5]

<u>Note A:</u> Vaughter et al. (2011) identifies "key" competencies in sustainability education as those which are specific to an academic *program* in sustainability. They recognize for example, that critical thinking skills are also an important deliverable for sustainability education, but that this competency is desirable for any education program.

<u>Note B:</u> In many of the learning outcome examples shown here, "social issues" can be interchanged with "environmental issues" to create learning outcomes more oriented to social sustainability or social responsibility. Despite this, a significant gap in the sustainability learning outcome literature exists for learning outcomes related to the practice of social sustainability.

References

1. Vaughter, P., Wright, T., McKenzie, M., & Lidstone, L. (2013). Greening the Ivory Tower: A Review of Educational Research on Sustainability in Post-Secondary Education. *Sustainability, 5,* 2252-2271.

2. Wiek, A., Withycombe, L., & Redman, C.L. (2011). Key competencies in sustainability: a reference framework for academic program development. *Sustainability Science, 6*, 203-218.

3. Redman, E. (2013). Advancing educational pedagogy for sustainability: Developing and implementing programs to transform behaviors. *International Journal of Environmental & Science Education, 8(1),* 1-34.

4. American College Personnel Association. Sustainability Task Force: Student Learning Outcomes, Assessment Materials Guidebook. Available online: https://ctlc.cornell.edu/filedepot_download/351/20. (Note: Carleton College also promotes these learning outcomes)

5. Hidalgo, L.A., & Fuentes, J.M.A. (2013). The development of basic competencies for sustainability in higher education: An educational model. US-China Education Review B, 3(6), 447-458 (only).

Learning outcomes discussed in detail within the learning community (and discussed one-on-one with participants)

- Critical thinking
- Systems-thinking
- Sense of responsibility
- Communication skills

Sample learning outcomes related to sustainability/social responsibility

Sustainability Learning Communities: Kickoff meeting, December 2014

The literature on education for sustainability and social responsibility refers to learning outcomes, competencies and skills. Although there are nuances in the meaning of these terms, we feel they are equivalent for our purposes and can be used interchangeably. The information in this table is drawn from this literature, and is loosely organized into two columns. The first column "Overarching categories" refers to broad outcomes whereas the second column, "Examples" refers to outcomes related to cognitive, methodological and altitudinal processes and contains a higher level of specificity than level one. References are found below.

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<u>Note A:</u> Vaughter et al. (2011) identifies "key" competencies in sustainability education as those which are specific to an academic *program* in sustainability. They recognize for example, that critical thinking skills are also an important deliverable for sustainability education, but that this competency is desirable for any education program.

<u>Note B:</u> In many of the learning outcome examples shown here, "social issues" can be interchanged with "environmental issues" to create learning outcomes more oriented to social sustainability or social responsibility. Despite this, a significant gap in the sustainability learning outcome literature exists for learning outcomes related to the practice of social sustainability.

References

1. Vaughter, P., Wright, T., McKenzie, M., & Lidstone, L. (2013). Greening the Ivory Tower: A Review of Educational Research on Sustainability in Post-Secondary Education. *Sustainability, 5,* 2252-2271.

2. Wiek, A., Withycombe, L., & Redman, C.L. (2011). Key competencies in sustainability: a reference framework for academic program development. *Sustainability Science, 6*, 203-218.

3. Redman, E. (2013). Advancing educational pedagogy for sustainability: Developing and implementing programs to transform behaviors. *International Journal of Environmental & Science Education, 8(1),* 1-34.

4. American College Personnel Association. Sustainability Task Force: Student Learning Outcomes, Assessment Materials Guidebook. Available online: https://ctlc.cornell.edu/filedepot_download/351/20. (Note: Carleton College also promotes these learning outcomes)

5. Hidalgo, L.A., & Fuentes, J.M.A. (2013). The development of basic competencies for sustainability in higher education: An educational model. US-China Education Review B, 3(6), 447-458 (only).

Glossary of terms relating to sustainability/social responsibility and education

Sustainability Learning Communities: Kickoff meeting, December 2014

The purpose of this glossary is to explore the diversity of definitions associated with common terms associated with sustainability and education literature.

TERM	DEFINITION(S) AND SOURCES	NOTES
Education for Sustainable Development (ESD)	o **UNESCO:** allows every human being to acquire the knowledge, skills, attitudes and values necessary to shape a sustainable future. ESD means including key sustainable development issues into teaching and learning; for example, climate change, disaster risk reduction, biodiversity, poverty reduction, and sustainable consumption. It also requires participatory teaching and learning methods that motivate and empower learners to change their behaviour and take action for sustainable development. ESD consequently promotes competencies like critical thinking, imagining future scenarios and making decisions in a collaborative way. ESD requires far-reaching changes in the way education is often practised today. o **Council of Ministers of Education (Canada), ESD Working Group:** encourages learners to develop active citizenship and participation, embracing the complexity of the interdependence of ecological, social and economic systems. o **Manitoba Education (2008), Learning for a Sustainable Future (1994):** encompass the knowledge, skills and values that enable learners to make decisions and choices that foster sustainable development and are necessary to become responsible citizens.	- Used widely in education literature since 2010. - 2014 ends UN decade for ESD. - http://www.unesco.org/new/en/education/themes/leading-the-international-agenda/education-for-sustainable-development/
"Key" sustainability competency	o **Wiek et al. (2011):** functionally linked complex of knowledge, skills and attitudes that enable successful task performance and problem solving. Applied to competencies in sustainability, these are complexes of knowledge, skills and attitudes that enable successful task performance and problem solving with respect to real-world sustainability problems, challenges and opportunities.	- Various additional references in Wiek et al. (2011).
Learning outcome	o **STARS manual (AASHE), UNESCO:** statements of what a learner is expected to know, understand, and be able to demonstrate after completion of a process of learning as well as the specific intellectual and practical skills gained and demonstrated by the successful completion of a unit, course, or programme. ("Sustainability learning outcomes are statements that outline the specific sustainability knowledge and skills that a student is expected to have gained and demonstrated by the successful completion of a unit, course, or program"). o **Suskie (2004):** A formal statement of what students are expected to learn in a course. Expected learning outcomes statements refer to specific knowledge, practical skills, areas of professional development, attitudes, higher-order thinking skills, etc. that faculty members expect students to develop, learn, or master during a course.	- STARS is the rating system for post-secondary education sustainability developed by AASHE. This is a general definition for learning outcomes, then adapted for sustainability-specific learning outcomes. https://stars.aashe.org/

Resilience	o **Center for Resilience (Ohio State U):** the capacity of a system to survive, adapt, and grow in the face of unforeseen changes, even catastrophic incidents.	- See Showstack (2014). - Center for Resilience: http://resilience.osu.edu/CFR-site/concepts.htm, see "Rethinking sustainability" - Note: "survivability" is also a term used in corporate scenarios.
Social Justice Education	o **Bell (1997)/Hackman and Rauscher (2004):** a number of key goals that can be distilled into three main areas: social responsibility, student empowerment, and the equitable distribution of resources. All three of these goals seek to help students become agents of their education as well as active, powerful, solution-oriented members of their communities- communities in which members feel safe and valued for who they are.	- Note emphasis on social responsibility as part of larger education movement.
Sustainability	o **McGill Sustainability Strategy (2014):** working towards a shared vision for a flourishing future in a manner that integrates social, economic, and environmental dimensions. o **Association for the Advancement of Sustainability in Higher Education (2014):** inclusive definition, encompassing human and ecological health, social justice, secure livelihoods, and a better world for all generations. o **Seventh Generation Principle (The Great Law of Iroquois Confederacy):** decisions (e.g. energy, relationships etc.) made today should result in a "sustainable" world seven generations into the future. o **Oxford English Dictionary:** the degree to which a process or enterprise is able to be maintained or continued while avoiding the long-term depletion of natural resources. o **Wikipedia:** the endurance of systems and processes. The organizing principle for sustainability is sustainable development, which includes the four interconnected domains: ecology, economics, politics and culture.	- 7th Generation Principle: see http://www.ictinc.ca/
Sustainable Development	o **Brundtland Report (1987):** development that meets the needs of the present without compromising the ability of future generations to meet their own needs.	

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Feedback Form: Sustainability Learning Communities 2014-16

Name: _____

1. **How would you rate your experience in the Sustainability Learning Community?**

1	2	3	4	5
Very negative		Neutral		Very positive

Please explain:

2. **Has anything changed in the way you think about sustainability, teaching and learning? If so, please describe this change and what prompted it.**

3. **Which processes, tools, strategies, etc. did you find valuable?**

4. **What would you like to see next for sustainability, teaching and learning?**
   a. **for you as an individual?**

   b. **for McGill as an institution?**

THANK YOU!