Welcome to the 2017-2018 Supper Series!

Help yourself to food and find a place to sit.
The talk will begin at 5:30pm.

Welcome

I would like to acknowledge that we are seated on the traditional, ancestral, unceded territory of the Musqueam First Nation.

Welcome

• The Year of the 100th Supper Series
  – Interactive
  – Building a diverse community of practice
• Thank You!
  – To you, the participants
  – Dean’s Office
  – Facilitators
  – Erika Borys
• Skylight Team

Skylight

• Ian Cavers
• Sara Harris
• Gulnur Birol
• Warren Code
• Eric Jandciu
• Noureddine Elouazizi
• Kalev Hunt
• Erika Borys

• Alice Campbell
• Matt Coles
• Warren Code
• Sarah Bean Sherman
• Ashley Welsh
• LTRs: Peter, Caitlin, Daniel, & Alan
• ...

https://skylight.science.ubc.ca/
Impact Assessment of Science Education Initiatives:
- What Strategies Have Worked?
- Which Will Support Continued Improvements of Science Education at all Levels?

Francis Jones (EOAS)
Ashley Welsh (Skylight & CTLT)


Impact assessment: a framework

- **Context**: In what setting are education initiatives taking place?
- **The initiative**: What exactly is planned for improving education?
- **Question(s)**: What kind of “impact” is of interest?
- **Measurements**: What will be observed or recorded?
- **Outcomes**: What do data say about impacts of the initiative?
- **Resulting actions**: How do stakeholders react to outcomes?
  - Students
  - Instructors
  - Administrators
  - Department or Faculty

Our objective today

- **Given the framework** …
  - Context:
  - The initiative
  - Question(s)
  - Measurements
  - Outcomes
  - Resulting actions
- **What are broader impacts of the work (initiatives) YOU do?**
- **How can impact assessment strategies INFORM and SUPPORT continued and sustainable improvements in science education at all levels?**
Our plan ...

- Use the framework to illustrate initiatives and assessments:
  - Small scale = assignments, assessments, lessons, etc.
  - Medium scale = course-wide strategies
  - Large scale = multi-course, program, department, faculty-level

- Identify examples around the room:
  - What assessments?
  - What impacts?

- Consider pathways from initiative → assessment → impact → broader implications for individuals, departments, FoS.

Example 1: A “small” scale project

- **Context:**
  Specific learning tasks in a large 1st year course (700+ students)

- **The education initiative:**
  Introduce regular homework based on reading various types of scientific communications.

- **Question(s):**
  - What impact on student workloads?
  - Is feedback that targets ALL students supporting learning?

Example 1: Measurements and outcomes

- All homework submitted online – therefore ...
- Add single, carefully designed feedback questions to assignments.

Workloads: “How long did you spend on this entire assignment, from starting to read, to final submission? _______ hrs.”

Feedback: “For the previous 2 assignments feedback was provided to everyone as a PDF file. Did you find this feedback worth while?”

- Resulting actions: How do stakeholders react to outcomes?
  - **Students:** Results were shown.
  - **Instructors:** Were shown results.
  - **Administrators:** Results disseminated in TLEF reports & at UBC events.

- What “impacts”? Stay tuned ...
Example 2: A large scale project

- **Context**: CWSEI in a whole department ... 7 years.
- **The initiative**: Change “culture of teaching” across the Dep’t.
- **Question(s):**
  - Do instructors change their teaching strategies?
  - Do students perceive active instructional strategies as more HELPFUL compared to traditional strategies?

**Costs**: A major initiative, so costs of direction, training, action, analysis, dissemination were high, but "built in".

Example 2, Measurements and outcomes:

**COPUS, Students' Learning Experiences Survey (SLES) and Teaching practices** instruments were designed, validated, deployed, analyzed & published.

**Helpfulness of active classrooms ...**

**Versus observations:**
Students perceive more active classroom strategies as more helpful (48 courses).  

**Versus teaching practices:**
SLES completed in 54 courses in 2013W.


Example 3: A faculty-wide project, and opportunities arising from it

- **Context**: Exploring student experience across FoS
- **The initiative**: To further enrich FoS student learning and experience (within and outside of the classroom)
- **Questions:**
  - What is currently impacting student learning and experience?
  - How could we enrich this learning and experience? What action can we (and students) take?
Example 3

**Measurements & Outcomes**

- Survey, focus group discussions, and one-on-one interviews to explore academic, social, and personal factors influencing student experience

**Example 3: A Faculty wide project**

- **Resulting actions**: How do stakeholders react to the outcomes?
  - Instructors: Supper Series presentation
  - Students: Sharing 2-pager and thesis/report
  - Administration: Presentation to department heads and Dean’s Office
  - UBC Community: Presentations to various advising and student engagement groups
  - Greater Community: Conference presentations and publications

**Individuals**

- Complete items 1 - 6 in the worksheet
- Consider any initiative you have been involved in, or know something about.
- 5-8 minutes

**Share with one or more colleagues**

- Share one or more of the examples with a colleague.
- 5-8 minutes
initiative → assessment → impact → implications

• How can we leverage impact assessments to more broadly inform the monitoring and improvement of teaching & learning?

• This is the “resulting actions” part of our framework
  – Students
  – Instructors
  – Administrators
  – Department or Faculty
  – Broader sci-ed community

Recall example 1: A “small” scale project

• Context:
  Specific learning tasks in a large 1st year course (700+ students)

• The education initiative:
  Introduce regular homework based on reading various types of scientific communications.

• Question(s):
  – What impact on student workloads?
  – Is feedback that targets ALL students supporting learning?

Recall example 1, the “small” scale project

• Resulting actions: How do stakeholders react to outcomes?
  – Students: Results were shown; they see the innovation is “reasonable”.
  – Instructors: were shown results. They may be reassured that students are not being overworked.
  – Administrators: told in TLEF reports. They see TLEF money serving it’s purposes.
  – Department or Faculty: (maybe??) encourage other similar efforts to increase the sophistication of learning in very large courses?

A caveat: “the preponderance of evidence”

• Consider “correlation” versus “causation” …

• Challenging to attribute any single “measured” value to a particular intervention or initiative.

• THEREFORE – gather as many independent measures as practical.

• Even if direct triangulation is not feasible, multiple messages may provide a strong suggestion of trends.

EG: Workloads = “reasonable” AND feedback = “useful” (+ other data) ==> impact of homework is +ve.
Recall example 2: A large scale project

- **Context:** CWSEI in a whole department ... 7 years.
- **The initiative:** Change "culture of teaching" across the Dep't.
- **Question(s):**
  - Do instructors change their teaching strategies?
  - Do students perceive active instructional strategies as more HELPFUL compared to traditional strategies?

Recall example 2, the large scale project

- **COPUS** = observations
- **SLES** = students’ perceptions
- **TPI** = instructor self-report

...multiple perspectives yield a preponderance of evidence about classroom practices.

**Resulting actions:** How do stakeholders react to outcomes?

- These are published works. Do stakeholders “listen”?
- Administrators, Departments, Faculties:
  - Studies are considered during major decision-making.
    - (Eg. UBC’s FoS recent commitment to hiring permanent SESs)
- Beyond UBC:
  - Other initiatives being funded, perhaps (?) partly justified based on these and other summative publications and consultations.
    - (Eg. Bay View Alliance’s TRESTLE initiative).

Recall example 3: The Faculty wide project

- **Instructors:** Supper Series presentation... department-specific projects exploring student learning and experience
- **Students:** Sharing 2-pager & thesis/report... explicit conversations and sharing of resources with first-year and senior students
- **UBC Community:** Presentations to various advising and student engagement groups... resources and results used in co-curricular programming
- **Greater Community:** Conference presentations and publications... invitation to contribute to a book on student experience and advising.
Discuss at the table.

- What do your examples say about the broader impact of the work you do? On you, on students, on instructors, on others?
- How can we leverage impact assessment tactics to **support** and **inform** ongoing monitoring of teaching & learning?
- The goal is to help identify and act upon priorities for continued, sustainable improvement.
- ~ 10 – 15 mins

Share

- Facilitators to ask for thoughts from tables. Also, gather worksheets.

Conclusion

- “Preponderance of evidence” ➔ Clearer, more cohesive picture of impacts.
- Opportunities for collaboration and visioning
  – Within and outside of departments/Faculties/UBC
- Sustainment and enrichment of impact assessment
  – What resources and support are required?

Thank You

- Means for gathering feedback on Supper Series and other Skylight events
- Questions/comments to **skylight@science.ubc.ca**

Next Supper Series: Tuesday, October 24th, 5-7pm
Example 3: an intermediate scale project

- **Context:**
  Improve all lessons in a very large 1st year course taught by six different instructors

- **The education initiative:**
  Base-line data to determine “needs” for action, and to encourage instructors to take advantage of support.

- **Question:**
  - Are all classes taught by various instructors similar in activity level?

Example 3, Measurements and outcomes:

- COPUS in all classes during 1 term: 6 different instructors.
- Aggregate COPUS results.

**Observations:**
Student activity level varies throughout the term.

Example 3: intermediate scale project

- **Resulting actions:**
  - **Instructors:** For change to happen, they must
    a) be interested in change and improvement, AND
    b) have time/energy to take action, even when help is available.
  - Instructors do their own cost/benefit analysis.
    Low benefit or high cost (or both) → low interest.
    (teaching only 4-5 lessons seems to = “low benefit” …)
  - **Department or Faculty:** Could use results to
    a) “encourage” change
    b) prioritize SES time
    c) modify delivery, administrative and / or improvement strategies
    d) others?