

# Using Self-Assessment to Extend Sustainability Competency Development

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# Land Acknowledgement



Img Source:

<https://cdn.britannica.com/47/147947-050-E36E2480/North-Saskatchewan-River-Edmonton-Canada-Alberta.jpg?w=690&h=388&c=crop>

## Outline

- What we did
- Why we used self-assessment
- How we use it
- Criticisms
- How we tried to address criticisms
- Results
- Discussion
- Recommendations

## Case Study

- Undergrad, upper level
- Sustainability Challenges (framed by SDGs)
- Elective
- Students from all faculties
- Community-engaged learning
- Course readings and activities
- Alternative assessment (specifications grading Nilson, 2014)

## Key Sustainability Competencies

- Systems Thinking
- Interpersonal
- Strategic - Strategies-Thinking
- Normative - Values-Thinking
- Anticipatory - Futures-Thinking

“assessment is not sufficiently equipping students to learn in situations in which teachers and examinations are not present to focus their attention. As a result, we are failing to prepare them for the rest of their lives.”

[Boud & Falchikov, 2007](#), p. 3



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## Determining a Path

- Identify strengths
- Identify needs
- Figure out how to address needs
- Access opportunities



“Self-assessment is the act of monitoring one’s processes and products in order to make adjustments that deepen learning and enhance performance....self-assessment is most beneficial, in terms of both achievement and self-regulated learning, when it is used formatively and supported by training.”

# Self-Assessment: Supporting Ongoing (Lifelong) Learning

- Identifying as an active learner
- Identifying your own level of knowledge and the gaps therein
- Practising testing and judging
- Embodying reflexivity and commitment

# Self-Assessment: Reflecting to Support Community Engaged Pedagogy

Experiential learning, by definition, requires reflection in order to “increase knowledge, develop skills, clarify values and develop people’s capacity to contribute to their communities”

- <https://www.aee.org/what-is-experiential-education>

# How Do We Assess Sustainability Competencies?

- Self-assessment and reflective writing are the most common methods
- Case/Scenario tests
- Performance observation
- Regular course work
- Focus groups or interviews
- Concept mapping
- Conventional testing

## Two Parts to Self-Assessment

- Pre and post self-assessments regarding set statements reflecting the 5 sustainability competencies
- Learning reflection:
  - Did you over or underestimate your skill or comfort level? What evidence are you basing this on?
  - In what ways, if any, did your pre self-assessment impact your learning plan?
  - What did you improve the most and what contributed to this improvement?
  - What would you like to continue to improve and what do you think would help you do this?



# Purposes for Self-Assessment in the Course

- Inform instructors and students regarding strengths and areas for learning
- Triangulate with other data sources to evaluate competency development

## Criticism of Self-Reflection

Two main criticisms:

- Accuracy
- Benefit to learning

([Andrade](#), 2019 p. 2)

- Triangulation was used to help mitigate accuracy issues
- Formative self-assessment rather than summative as well as a described purpose for informing learning was used to try to ensure benefit to learning, however this may have had limited effect in terms of students own use of their self-assessments during the course.

## Findings

According to self-assessment

- Semester 1 - all 5 competencies were significantly improved with high levels of significance for interpersonal, systems, anticipatory (futures-thinking), and normative (values-thinking)
- Semester 2 - three of the five were significantly improved: systems, anticipatory, and normative

## Findings: Student Perceptions

## Accuracy is challenging

To a great extent, because I largely overestimated my comfort levels and skill levels, it contributed to an overestimation in my learning plan and reading list. For example, in reflecting upon the creation and development process, I realize now that my reading list was based on the belief and understanding that I was comfortable and skilled at being aware of and knowing what the community partner wanted. In reality, it was more challenging and difficult to envision their perspective and role in the process in terms of creation and development as well as evaluation.

Student 28

## Accuracy is challenging

I think that I underestimated my ability on a lot of the skills because I had never had the chance to apply them to a real-life situation before.... it was very difficult for me to envision and understand my ability to apply these concepts to a real situation.”

Student 2



## Taking Responsibility for Learning

the initial self-assessment pushed me to step outside of my comfort zone when working on the project. More specifically within the group aspect to work on communicating and voicing my opinions.

Student 11

# Foster Self-Regulated Learning and Critical Thinking

While doing this project, I realized that thinking in systems is difficult. I often fall into element thinking and then have to remind myself of the connections and feedback loops within a system again. This way of thinking can be difficult because it requires a person to completely scratch what they have been taught previously about assessing problems and brainstorming solutions. As seen with the pandemic, humans are not very good at change, and changing your way of thinking does not happen overnight. Systems thinking requires practice and one thing I hope to make time for in my future projects is to build a visual systems map, like we did this year, to keep my mind focused on the importance of the things happening in between the elements.

## Findings: Instructor Perceptions

- The actual ratings mattered less than identifying areas for/of growth
- The pre self-assessments helped prime students for what they would do in the course
- The reflections and the self-assessments supported students in considering their own learning and identifying future goals

## Recommendations

- Be explicit - let students know why and teach them how
- Refer to the self assessments and the topics from the self assessments throughout the course
- Combine reflection with self-assessment to deepen the learning
- Encourage students to apply the self-assessment to their future

Thank You!  
Questions: Please Contact Us

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