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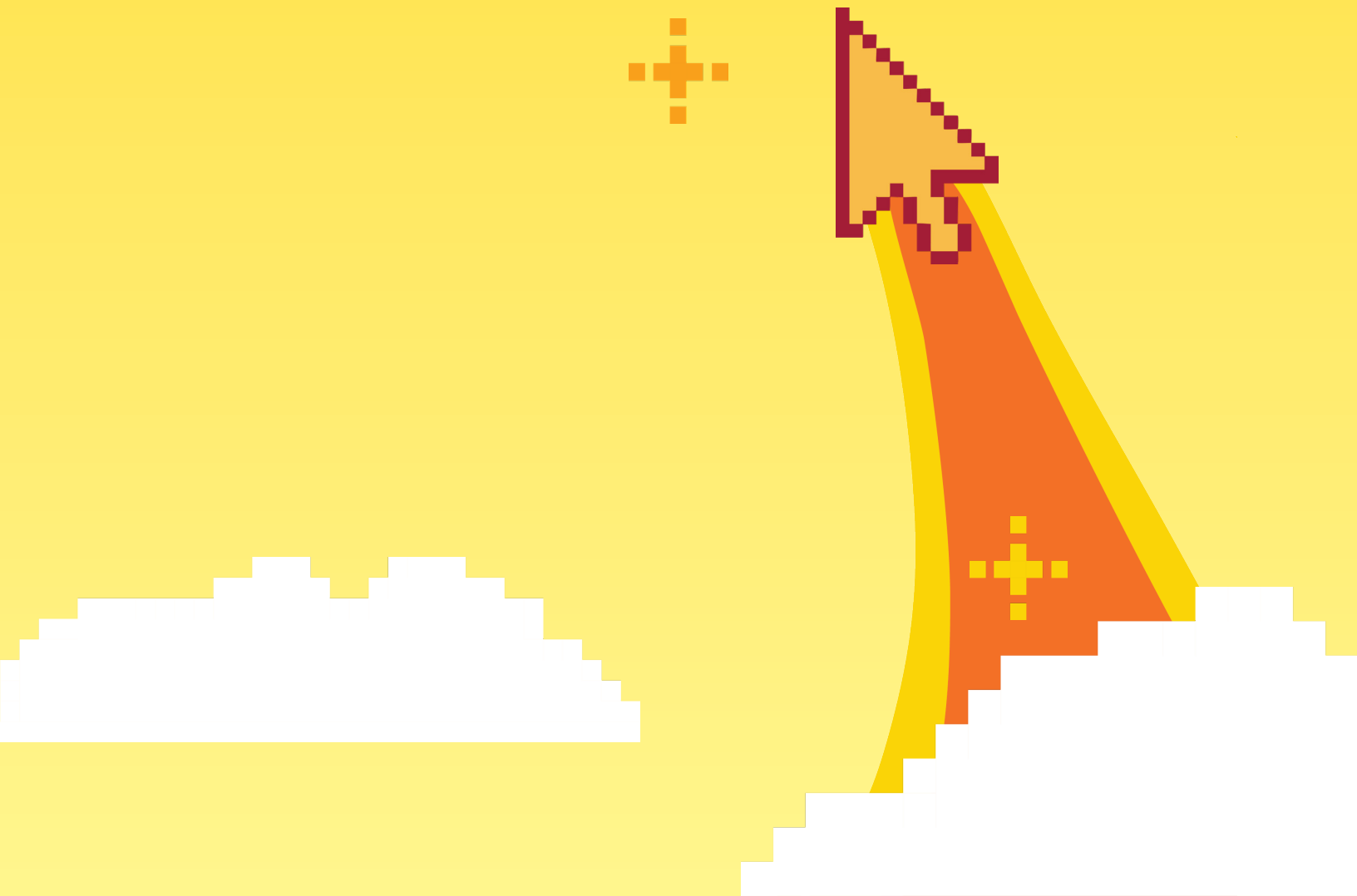
A Toolkit for Future Skills at UCalgary

Implementation Considerations & Case Studies



A Toolkit for Future Skills at UCalgary: Implementation Considerations & Case Studies

TAYLOR INSTITUTE FOR TEACHING AND LEARNING | UNIVERSITY OF CALGARY
OFFICE OF SIGNATURE LEARNING EXPERIENCES | UNIVERSITY OF CALGARY

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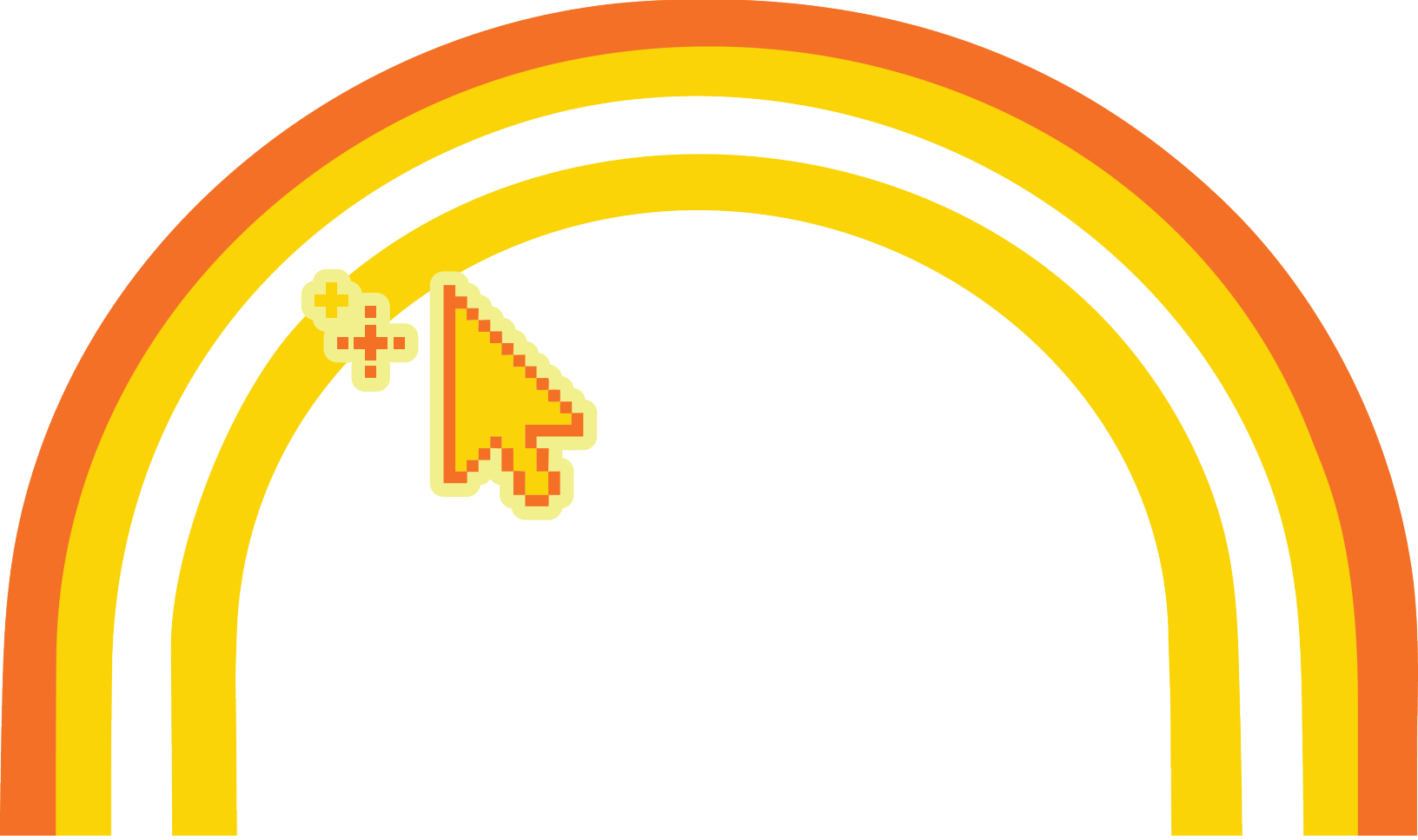

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Introduction

The University of Calgary is part of the Future Skills Innovation Network (FUSION), a collaborative group of Canadian universities focused on innovative skill development to prepare students for the future economy and become active citizens in 21st-century society. Initially launched as part of the federally funded Future Skills Centre, FUSION consists of five partner institutions: University of Calgary, University of Saskatchewan, Carleton University, Concordia University, and Memorial University (FUSION, 2024).

FUSION's network model helps to foster collaboration around skill development and speed the diffusion of successful innovations through its additional partnerships with business and industry. FUSION represents an innovative way of working for Canadian universities and fills a vital gap and significantly contributes to Canada's skills ecosystem.

A skill is "a learned power of doing something competently: a developed aptitude or ability" (Merriam-Webster Dictionary).

The Canadian job market has and will be significantly disrupted by technology with an overhaul of skills required to perform many jobs (RBC, 2018). In an era of AI, what matters most for a successful knowledge worker are human and transferable skills (Aoun, 2024), skills that enable students to communicate, collaborate, and harness what makes us uniquely human. Transferable skills help students understand the "why" behind their coursework, connecting academic content to potential careers (Berdahl, 2021). High levels of skill, combined with education, are often linked to positive social outcomes, such as good health, trust in others, and influence on government (Postsecondary Education and Skills in Canada, 2016). As universities prepare students for the future, they play a crucial role in fostering these essential transferable skills.

About Future Skills & FUSION

The FUSION Skill Development Initiative offers online asynchronous eLearning modules focused on specific skills. Each skill module has three phases that allow students to:

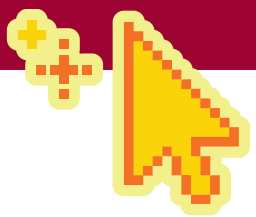
Explore key skills and self-assess their current skill level (~1-2 hours)

Apply skills to their personal, learning, community, or work life (~1 hour)

Reflect on how they have developed these skills through the module (~1 hour)

In addition to the eLearning module, each skill has an accompanying workbook. The student workbook allows students to record their self-reflection over their learning journey.

"Self-reflection is setting aside time to think deeply and evaluate your thoughts, attitudes, motivations, and desires. It can be as simple as looking back at your behaviour in any scenario to ask yourself why you behaved the way you did. The value of self-reflection lies in its power to help identify what's working well in your skill area and develop insight into what isn't working well, and why. Reflection can provide you with fresh perspectives, focused learning, and deeper understanding" (FUSION, 2024).



Student Audience

The skill modules are created for a university student population and have been tested with students from first-year undergraduate to PhD at UCalgary with strong results. FUSION's design focuses on definitions, processes, models for skill development, and critical reflection (avoiding "how to" or simple instructions). Given skill-development is life-long and continuous, we have found the modules are flexible to different levels of learners who can apply the skills to their own context.

To support accessibility, the modules are offered in two distinct formats to support individual learner's needs and preferences:

- eLearning modules (which are interactive with videos and self-assessments)
- Fully written modules (accessible for screen readers)

The modules support different types of learner's needs and preferences. We recommend that both formats be provided for learners to access the format that works best for them.

Goals for this Toolkit

About the Toolkit

This is a toolkit for instructors who are interested in the skill modules and want to plan the integration of the content in their classroom. It is meant to inspire and guide decision-making so that instructors can:

- Identify common decisions when implementing skill modules into their learning opportunities
- Prompt questions for consideration
- Consider examples of integration
- Review case studies based on actual implementations of Future Skills modules in academic courses

If you have questions or want to discuss your plan, please contact: future.skills@ucalgary.ca

After reviewing this document, you should have an action plan to support an integration of the skill modules into your course.

Additional resources to support this process:

- Future Skills Learning Outcomes
- Future Skills Modules (the fully written version)

Field Notes

Field Notes in this toolkit share insights from classrooms, and patterns that consistently worked across many pilot courses. The goal is not to prescribe a uniform method, but to share field-tested insights that can help you make informed choices that best fit your unique teaching context.

From 2024 to 2026, we piloted the skills modules in over 40 graduate and undergraduate classrooms and programs across 12 faculties. Pilots varied greatly in class size, discipline, teaching philosophy, and the instructor's experience with reflective assessment. Because of this diversity, a single right way to implement Future Skills is not realistic or respectful of instructor expertise.

Making Skills Matter

Field Notes

- We found with all levels of learners, it's important to explain why skills matter in the context of their courses, career and life. Students may think they don't need to learn the skill, or they are already "good enough" at it. It's important to help students understand that building skills is a lifelong journey, and you never quit trying to improve.
- Students may overestimate their competence with the skill, and think they have it already (Dunning–Kruger Effect).
- Students want to make meaning between what they are learning, and their future.

Patterns That Worked

- Instructors explained the importance of the skill in context of what they were studying. One way to do this is share an article on why skills matter for new graduates in your degree or program. For example: explain why and how AI is important in engineering.
- Instructors had students brainstorm why the skill matters. "Flip the classroom" and ask students why the skill is important in their field of study. Some students will immediately see the value, and can help others understand.
- Some instructors told a story about their own personal development with the skill. Students saw how the skill can be relevant to them personally, and in their career. This demonstrated care about students' skill development, and modelled what reflection looks like.

"Students need to understand how and why a module matters to them, beyond the grade. When they see the personal value and relevance, they are more likely to engage meaningfully rather than simply complete the tasks in a perfunctory manner. It helps to "sell" the module by providing clear, concrete examples of how it supports their learning and future goals, their cognitive development, and by revisiting this rationale repeatedly-especially before deadlines. What feels obvious to us as educators often isn't to students, so making the purpose explicit is essential to fostering genuine investment."

Evguenia Iskra, Associate Professor (Teaching), Haskayne School of Business

Implementation Plan

We invite you to capture your plan as you work through this toolkit. We encourage you to experiment and try new approaches to implementation! As you work through the decision-making process in the pages that follow, return to this page to capture your plans and ideas.

Decision	Question	Plan
1	**Module Selection** Which module(s) support the goals of the course or goals of the skill integration?	
2	**Applied Learning** In what context will students be asked to reflect on their skill development?	
3	**Assessment** What will form the assignment for skill development?	
4	**Grade & Feedback** What weight will the skill development work be assigned? How will it be graded?	
5	**Pacing of Phases** How will you encourage application of the skill by pacing the three phases?	
6	**In-class Activities** What are ways to align the skill development content with your core course materials?	
7	**Implementing Multiple Modules** If using multiple modules, how will you organize the learning?	
8	**Customization** How will you adapt the modules?	

Decision 1: Selecting a Module

The FUSION network has created 13 skill modules. To manage the scope of a new integration we recommend starting with one or two modules for your course or program. Each module is designed for standalone use. As such, no one module is a prerequisite for another. The skills align with the Skills for Success framework created by the Government of Canada, identifying the everyday skills Canadian's need for success in work, school, and life.

Descriptions of all modules are on the University of Calgary Future Skills website.

Questions for Consideration

Review the module learning outcomes and consider the following questions:

Which modules (if any) support the learning outcomes of your course?

Are there any specific skills you want students to develop by the end of your course?

What specific concepts do students typically struggle with in your course that the modules could support?

Are there any classroom management challenges that could be addressed by students developing their skills?

Are there any program-level outcomes which the modules might help meet?

The alignment between the skill and the course can be conceptualized in two ways:

Enabling Skill approach: modules enable performance in the classroom.

This means the skill is being used to help students perform on an assignment or in-class experience.

Examples

- Collaboration in a course with a major group project.
- Problem solving in a technical course.
- Communication in a course that has presentations.
- Constructive Dialogue in a course with debates.

Core Content Alignment approach: modules directly relate to the content in the course.

This means the content directly aligns with the current learning outcomes and course material that is taught. In this case, students are personalizing their learning and directly applying the content from the module and class.

Examples

- AI Literacy in a computer science course.
- Innovation in an entrepreneurial thinking course.
- Creativity in a creative writing course.

Even if there is a module that fits the Core Content Alignment approach, some instructors prefer to use an Enabling Skill approach and focus on the core skill in class time. For example, a course on innovation may leverage the Creativity or Constructive Dialogue modules instead of the Innovation module.

CHECK-IN

Do you even need to add or adapt a learning outcome? You might or might not.

If you are adding a learning outcome, feel free to take a learning outcome from the module itself (outlined in the beginning of the Explore phase.)

Field Notes

Enabling Skill approach benefits:

The module extends teaching in areas where instructors may not have pre-built content. It helps to address performance gaps that matter to student learning and overall success. Students benefit from understanding explicitly how the skill will help them succeed in course activities and career. **Instructor framing is key.**

Core Content Alignment approach benefits:

The module provides structure so students can critically reflect on the skill they are building. Students require less explanation about "why" the module is included because it is aligned. However, sometimes the module covers similar concepts to what is already taught in class and feels repetitive.

What if a student has completed the module before?

It's totally appropriate for the student to review the content and reflect on the skill in their current context. Skill building is a lifelong process, and iteration helps.

Patterns That Worked

- The Enabling Skill approach was the most common choice in the pilots, it directly improved student performance without replicating course content.
- The Core Content Alignment approach fit best with longer-term applied learning courses (e.g., 8 months) where critical reflection was needed. It enabled students to situate their transferable skills within a wider disciplinary and career context.
- A few pilots started with the Core Content Alignment approach, but later determined that the Enabling Skill approach would avoid repetition or imperfect alignment.

"I had an 'aha' after working on two fantastic pilots when we had selected a skill too close to what was already being taught. The module felt redundant and misaligned. If the skill doesn't feel like the right fit the first time, it's okay to try a different skill next time."

Gillian Robertson, Specialist, Future Skills, University of Calgary

Case Studies: Module Selection

Enabling Skill approach

Course  **Communications 200: Intro to Comms & Media Studies**

Module  Collaboration

Learning Outcome Learning outcome added.

Course  **Finance 400: Security Analysis & Investments**

Module  Problem Solving

Learning Outcome Learning outcome added.

Core Content Alignment approach

Course  **Geography 200: Thinking Spatially in a Digital World**

Module  Digital Literacy

Learning Outcome No change to learning outcome.

Course  **Sociology 300: Sociology of Ethnicity and Racialization**

Module  Inclusivity

Learning Outcome No change to learning outcome.

Decision 2: Defining the Applied Learning

As students work through the module, they are asked to apply the skill in an applied learning opportunity. That can be defined as a specific part of the course, or it can be left open for students to reflect on their application of the skill in many different contexts.

The Enabling Skill approach often has an applied learning assignment in the class. However, you can also allow students to reflect on their experiences outside of the classroom.

The Core Content Alignment approach often allows students to apply the skill to something in the class and more generally in school, work, and life.

Questions for Consideration

Narrowly defined: Do you want students to apply and reflect on a project/experience in your course?

Broadly defined: Do you want students to apply and reflect on the skill in all aspects of learning, work, and personal life?

Field Notes

Narrowly defined applied learning provides a clear and specific context for students to reflect on, which helps keep reflections aligned with the course.

However, when the context is too specific, some students feel they do not have a relevant experience to draw from.

For example, using the AI Literacy module during an internship that strictly prohibits AI use, may limit students' opportunities to apply the skills they learn.

Broadly defined applied learning gives students flexibility in choosing what experiences to draw from — academic, work or personal life — which can lead to rich, authentic reflections.

However, many students select personal contexts to reflect on, and include details of personal relationships, life events, and health, which some instructors may feel uncomfortable assessing.

The modules invite students to critically reflect, exploring past experiences, and it's natural for different emotions to come up. It's important to present campus well-being supports to students at the outset. If you have a student in distress, you can refer them to on- or off-campus resources.

Patterns That Worked

- Linking reflection to course-based applied learning, such as an in-class activity, encouraged direct connection between the skill and the course, and helped keep reflections focused on meaningful course-related experiences.
- When the context is narrowly defined, students may need an opt-out or hypothetical option to reflect on (e.g., if you cannot think of a time in your degree that you can reflect on, then you can pick a personal scenario).

"Some students related to the modules on a personal level which means some level of personal and sensitive information was shared."

Eva Berepiki, student partner, Schulich School of Engineering

Case Studies: Applied Learning

Enabling Skill approach

Course  **Communications 200: Intro to Comms & Media Studies**

Module  Collaboration

Applied Learning Students worked in groups and completed the collaboration module and reflected on their collaboration skills collectively and independently.

Course  **Finance 400: Security Analysis & Investments**

Module  Problem Solving

Applied Learning Students completed multiple assignments using real-world financial data, they reflected on their problem-solving abilities in completing the assignments.

Core Content Alignment approach

Course  **Geography 200: Thinking Spatially in a Digital World**

Module  Digital Literacy

Applied Learning Students were asked to make connections to the course work, school, and life.

Course  **Sociology 300: Sociology of Ethnicity and Racialization**

Module  Inclusivity

Applied Learning Students were asked to make connections to the course work, school, and life.

Decision 3: Assessment

Best practice in skill development integration involves an assignment with a weighted grade for engaging in the module. This section explores possible assessment approaches and the following section, Decision 4, explores grading and feedback.

Questions for Consideration

How much time do you intend for students to spend on the modules?

Do you want the workbook to be submitted as proof of completion?

Are there existing assessments that can be used to evaluate student skill development from the module?

Examples of Potential Assignments

Assignment	Description	Example(s)
Student workbook is the assessment	Students submit the accompanying student workbook for the skill module. This is the most common form of assessment.	• Workbook is used in a complete form, with specific guidelines on how much to write (amount and style of writing) and what to write about (applied learning). • Workbook is modified to reduce or add questions students answer to fit the course learning outcomes and instructor expectations of workload.
Existing assignments are modified	An existing assignment is altered to capture skill development and critical reflection.	• Questions about the skill development and applied learning are incorporated into an existing assignment such as an essay, report, or presentation. • Questions from the workbook can be turned into class discussions and awarded in-class participation marks.
New critical reflection assignment is created	Students are asked to submit a reflection on their learnings from the modules (e.g., report, journal entries, annotated artwork, presentations, voice recordings, quizzes).	• A quiz is assigned that has three knowledge testing questions, self-assessment scores, and one reflection question at the beginning and end of semester. • A five-minute podcast reflection with curated questions. • Discussion board post and responses to two other students' posts.
Skill evaluation assignment	An assignment is created wherein students are simply applying the skill.	• A major in-class experience allows students to apply the skill, students are assessed based how they demonstrated concepts from the module.

Field Notes

- The majority of assignments have some critical reflection, which is new for many students, and they may think personal disclosure is necessary, when it is not the goal of the exercise.
    - Reflection can take students longer than expected.
- Pass/fail or complete/incomplete grading schemes can lead to ambiguity.
- Without specific parameters students may overshoot (e.g., 30+ page workbooks) or undershoot (e.g., one-word answers).

Critical reflection is central to skill development, and a core part of the modules. It allows students to realize the skills they already have, are learning, and compare their skill ability before and after application, realize gaps in their learning, and note areas of future growth as life-long learners.

Think about your audience and their prior experience with critical reflection. How can you help them understand how to critically reflect?

Patterns That Worked

- **Written and verbal instructions** reduced students' uncertainty.
- **Short examples of good reflection**—anonymized, fictional, or generic—helped students understand the style and tone required.
- **Time estimates** (e.g., "This should take four hours") normalized expectations.
- Pass/fail and complete/incomplete grading worked best when paired with an **explicit criteria or a rubric.**
- **"More writing does not mean higher quality"** reduced student anxiety.
- **"More personal disclosure does not equal good grades"** helped reassure students that strong work comes from analysis, not vulnerability.

"One of challenges that I noticed was that students were over-complicating the modules and workbook. This could have been due to general stress, or maybe my introduction to the module was not in-depth enough. I was able to clear this up in my responses to emails as well as posts on D2L."

Gabby Hoehn, student partner, School of Architecture, Planning and Design

Case Study: Workbook as the Assignment

Course **Sociology 300: Sociology of Ethnicity and Racialization**

Module Inclusivity

In Sociology 300-level class, students submitted their workbook valued at 10% of their final grade. The following is an example of providing guidance on how to approach the modules and how much to write in the workbook. A rubric was also provided.

Instructions

All of the material necessary to complete this module can be found on our course D2L under the tab **Future Skills: Inclusivity** under **Content**.

1. Download the "Self-Management Student Workbook" in .docx. This is the workbook you will be completing asynchronously and submitting for assessment.
2. Watch #1 Orientation video.
3. Complete the #2 Explore on your own.
4. Complete the #3 Apply on your own. We will be discussing some of these scenarios together in class on {Date}.
5. Complete the #4 Reflect on your own.
6. Upload your completed workbook via D2L under the tab "Dropbox" before the deadline of 12:30pm on {Date}.

How much to write

It is your reflection, so it needs to reflect where you are in the thought process when you give yourself the time to think about it. Reflection is an activity where it is hard to pin down in terms of a definitive answer — it should be the right length for you. A guide is the size of the text boxes for each section. Think about the following:

- Please answer the question in an appropriate way. That means that some of the responses might be lengthier, some smaller, but in general they will be more than a one-word answer.
- If your answers are all 1 sentence long, you may want to reconsider whether you fully addressed each of the questions.

Instructions created by Dr. Ayesha Mian Akram, University of Calgary (2025).

Decision 4: Grading & Feedback

Best practice involves assigning a grade to engagement in the skill module.

Questions for Consideration

Is this part of the overall grade for the course or bonus marks?

- **Overall grade:** 3–15% of final grade is common for one module including workbook submission
- **Bonus:** 1–2% is common

Do you want to assess with a letter grade or mark as Pass/Fail or Complete/Incomplete?

Do you break down the grade for each phase? E.g. 2% for each of Explore, Apply and Reflect

Can a rubric be used to clarify expectations and streamline providing feedback? (Grant et. al)

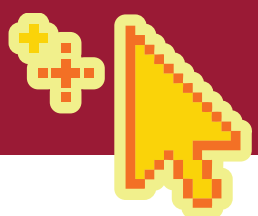
Will you provide written feedback in supporting their reflection?

Grading the Workbook / Critical Reflection

Evaluating the workbook is evaluating critical reflection, which is not a prevalent practice in all disciplines. If this is your first time grading critical reflection, you may consider using a sample rubric (see appendix A: Rubrics) or simply marking for completion (based on expected word count).

Learning Module: Critical Reflection

This online module was developed to introduce the use of critical reflection to faculty and staff. This includes but is not limited to university professors, course instructors and co-curricular staff.



Field Notes

Pass/fail or complete/incomplete grading ("non-letter grading")

- **Pros:** Some instructors felt non-letter grading was perfect to assess that students had engaged with the material and can keep marking streamlined.
- **Cons:** Some instructors felt non-letter grading did not recognize students who did a considerably better job than others. Also, setting a clear line for pass/complete became challenging when student submissions only partially fulfilled expectations.

Student workbook

- Completed student workbooks can be potentially time consuming to assess, especially if given a high-grade weight.
- Assessing student workbooks for completeness and engagement, using a simple rubric for large enrollment classes, can streamline marking.

Phases

- Students may miss expectations if feedback is not provided early on, e.g. in the Explore phase.

Assessing the skill

- Add the skill application to your rubric for major assignments. Example: the display of creativity in their work.

Large enrolment courses

Balance ensuring students complete the Explore phase in a timely manner with containing grading efforts around reflection. Leverage "knowledge check" auto-grading quizzes (available in UCalgary's Facilitator Portal) after the Explore phase and several reflection questions embedded in an already existing exam or paper for the Reflect phase.

Critical reflection

The role of the instructor is not to mark *what* students reflect on. It is to assess *how* they reflected. Were they able to describe their experience, examine their learning, and articulate the learning?

Patterns that worked

- Ensuring there is a grade associated with skill development work (either assessing the workbook, parts of the workbook, or that work feeds into another assessment).
- **Using the modules and workbook to feed into other expectations** without directly assessing the completion is a great option to manage workload.
- Using a rubric with some leeway around what pass/complete means (e.g., four of the five expectations must be met).
- Using a simple rubric with differentiated grades to recognize students who go above and beyond provides the opportunity to reward excellence.
- Formative feedback is critical early on helps students improve their reflection.

"Feedback plays a central role in whether the FUSION modules translate into deeper learning, because growth is not automatic without clear and specific guidance. The first time I supported a large course, many submissions met requirements but did not fully engage with the reflective intent, and in hindsight our feedback may not have made expectations concrete enough. The second time, I left at least one actionable point of feedback for every student, and many demonstrated increased clarity, specificity, and depth.

High quality, intentional grading becomes a structured mechanism for strengthening engagement and deepening reflection, especially at scale."

Ethan Sam, student partner, Schulich School of Engineering

Case Studies: Grading & Feedback

CASE 1: New assignment

6% weight

- Rubric using the DEAL model
- Points awarded on a 3-point scale
- Students were allowed a second attempt to resubmit and receive full marks

Grading

Graded with detailed rubric

Feedback

Digital rubric embedded in D2L was used to provide feedback on the final submission

CASE 2: In-class activities

One of multiple in-class activities worth 5%

Division of the 5 points:

- 1 point – Explore
- 3 points – Completion of in-class activity for Apply phase
- 1 point – Reflect

Grading

Pass/Fail with criteria for what a pass looks like (no rubric)

Feedback

No feedback provided

CASE 3: Core assignment

15% weight for 3 phases

- 5% Explore phase (3 modules)
- 7% Apply phase (3 modules)
- 3% Reflect phase (3 modules)
- Weight aligns with writing expectations for each phase
- Students who didn't pass could resubmit and still receive full marks

Grading

Pass/Fail with detailed rubric

Feedback

Written feedback was provided for each phase

Resource: Consistent and Effective Grading

The strategies in this resource can help you streamline the grading process in meaningful ways.

Resource: How to create D2L rubrics

Instructions on how to create an analytic rubric in D2L.

Decision 5: Pacing of the Phases

Best practice is to encourage students to complete the module **over time, not in one sitting**. The three phases should be separated out to allow students time to learn the skill and then apply the skills in their applied learning, then bring those learnings back to the **Apply** and **Reflect** phases.

To ensure students pace the modules, create separate assignment dropboxes and due dates for each of the three learning phases (**Explore**, **Apply** and **Reflect**). However, depending on the course and the weight of the assessment this may not be ideal. Instructors need to balance the ideal pacing of the modules and the number of assessments to grade.

Alternatively, you can:

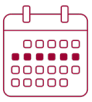
- Assign recommended due dates for each phase but create only one submission dropbox with a single due date for the completed workbook.
- Assign release dates in the learning management system (e.g., D2L) for each of the phases to encourage completion over time.
- Offer in-class activities with expected pre-work and post-work.

Questions for Consideration

Should the pacing match that of another assignment or activity?

Do you want students to develop the skill early in the semester? Or later?

Examples



Block week
1.5 weeks

Pre-work: Explore
During: Apply
After: Reflect

Quick
3 weeks

Week 1: Explore
Week 2: Apply
Week 3: Reflect

Typical
6 weeks

Weeks 1–2: Explore
Weeks 3–4: Apply
Weeks 5–6: Reflect

Long
24 weeks

Weeks 1–3: Explore
Weeks 4–8: Apply
Weeks 9–12: Reflect

Field Notes

- Building a new skill takes intentional effort and regular reflection over time, so pacing is very important.
    - **For example,** if students are building communication skills, they need time to have multiple different communication interactions before they engage with the Apply and Reflection sections of the modules to think about what went well or did not, related to what they learned in the module.
- Without prescribed due dates for each phase of learning, students frequently left the full module to the end, learning the skills and reflecting after the applied learning opportunity had taken place.
- The most important section to separate early on is the Explore phase. Students expressed that having more time to think about the Apply phase helped them see the real-life relevancy and think about when they have used skills in past situations.

Patterns That Worked

- Instructors noted that breaking up the modules into separate workshop and activity days helped students stay on track with their workload and allowed space for individual level reflections.
- Implementing clear deadlines and due dates to check for completion of specific phases helps prepare students for in class content and application.

> "[Without a due date for each phase], it was difficult to ensure that students completed the modules early, and applied their learning throughout the semester, rather than leaving everything until the end when the workbook was due."
>
> **Jenna Baker, student partner, Haskayne School of Business**

Decision 6: In-Class Activities

Students regularly report at UCalgary that they want opportunities to discuss the learning and application with their peers. In-class activities, such as a skills moment or using a flipped classroom approach, are ways to accomplish this.

Skills Moment

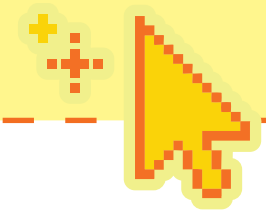
Dedicate one or two slides in several classes to talk about the skill. This could be reading a passage from the module, sharing a reflection you have, or sharing an observation on the skill. It could involve simply sharing a quote or reflection question from the modules and having students discuss for five minutes in pairs or small groups. Instructors can implement this technique throughout the course multiple times, considering where in the modules students are at (example: focus on content from Explore near the due dates for this phase). Instructors who have used Future Skills modules frequently recommend integrating Skills Moments when using the modules.

This is an example of using content from the module to create a Skills Moment slide to bring the content into the classroom. This example takes 10–15 minutes to complete in class. It can be accompanied by a due date reminder and expectations for skill training.

Skills Moment: Metacognition

Self-planning requires two key activities: deciding what you need to learn and establishing how you are going to learn what you need to learn.

- Think about how often you: "Set goals for what I am going to learn."
    - Often, Sometimes, Never
- What is one goal you can set for this course?
    - Discuss with your partner for 5 minutes.



Flipped Classroom

A **flipped classroom** is a teaching approach where traditional learning methods are reversed. Instead of introducing new content during class and assigning homework for practice, students first engage the skill development modules outside of class (Karanicolas, 2016). Instead of lecturing, the instructor guides students in-class to apply the concepts to "authentic and real-world situations" (Karanicolas, 2016). This could involve discussions, problem-solving, group activities, and hands-on learning (Anselmo, 2023).

This has been successfully implemented in small and large classrooms at UCalgary. For a detailed Case Study see Appendix B.

Questions for Consideration

What are the expectations before the session?

- **What should students complete before class?** *Typically completing Explore phase and participating in Applied Learning.*
- **What are they prepared to discuss?** *Provide the questions to discuss before class.*
- **What does this count toward?** *E.g. in-class participation grades or is it dedicated class time to complete the Apply section which is graded.*

What ground rules and expectations do you want to set?

- **Confidentiality** *Personal information and experiences are shared — what is discussed here stays here.*
- **Notetaking** *Are they meant to keep individual notes or group notes? Do you have a format for them to use, such as a virtual whiteboard?*
- **Report back** *Will they be called on to talk about their table discussions?*
- **Participation expectations** *Cameras on if virtual. How will participation be tracked?*

How much time will you dedicate and how will you assess?

- **How many questions will you pose to the students?** *The amount of time will help you plan out how many questions you want students to cover. 5-10 minutes for a single question is appropriate.*
- **Do you want to allow for time to think independently and then discuss? Or straight to discussion?**
- **Do you want anything in writing as proof of completion? Or will attendance be proof of completion?**

Example

How to convert the written activities from the Constructive Dialogue module to flipped classroom conversations (FUSION, 2024).

Constructive Dialogue Workbook

Activity 1:

Think about a time in your applied learning when you received feedback highlighting areas for improvement.

- **Q1** How did you feel when you received the feedback?
- **Q2** How did you engage in constructive dialogue with the sender upon receiving the feedback?
- **Q3** To what extent did you agree or disagree with the feedback you received?
- **Q4** What factors made you decide to implement or not implement the feedback?

In-class conversation example

Discussion question 1:

Think about a time in your *{customize to course definition of applied learning}* when you received feedback highlighting areas for improvement.

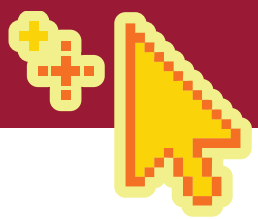
- **Q1** How did you feel?
- **Q2** How did you engage in constructive dialogue?

Resource: Collaborative Activities for Online Learning

Collaborative learning activities and approaches vary in the amount of in-class and out-of-class time built around collaboration. This resource includes activities that can be used in any discipline and modified to suit any course context.

Resource: Adapting course elements

Consider how you can adapt course content with this lesson in the Adaptable Course Design Learning Module.



Field Notes

- For both students and instructors, the most impactful implementations encouraged students to learn the skill through the Explore phase, then actively apply or discuss the skill in the context of the class and reflect on that learning.
- Adding in-class activities connecting the skill to the subject matter of the course helped students practice the skill intentionally in discipline-specific contexts.
- Students value the opportunity to reflect and learn in community-based environments rather than just on their own.
- In-class critical reflection helped build student skills around what critical reflection is and how to do it. Instructors can coach students in real-time.

Do you already have participation-based in-class discussions/activities or other experiential learning activities that could be adapted? Or are students doing something "real-world" but haven't critically reflected on it?

Patterns That Worked

- Adding in-class activities such as think-pair-share or table discussions was an easy and effective foundation for module integration.
- Taking the learning out of the workbook and embedding it into authentic classroom experiences allowed for a showcase of relevancy and the importance of skilling.

"In a 300-level sociology class we created a real-time skill application for students using ChatGPT related to the course content. The discussions and activities lasted the entire class-block, as students brought up their concerns comments and questions, they were actively engaged with their learning. Following the activities, I received multiple follow-up e-mails asking for additional opportunities for skill learning and development, as well as ways to expand on the modules.

The learning went beyond the classroom, and students were able to critically reflect on their own skills, areas to improve, and how to improve the modules themselves."

Joshua DeGuglielmo, student partner, Faculty of Arts

Case Studies: In-Class Activities

CASE 1: Simulation (AI Literacy)

Module AI Literacy

Dr. Jenny Godley, PhD
Sociology 355: Population & Society

- Students completed the AI Literacy Explore phase before an in-class lab.
- Students participated in a lab where they used generative AI to produce international migration data and then requested policy recommendations from AI for the global north and global south based on that data.
- Students observed the differences in AI policy recommendations between the global north and south.
- Students reflected and discussed concepts from the module such as biases and ethical decision-making with AI in the context of international migration policy.

CASE 2: Table discussion (Inclusivity)

Module Inclusivity

Dr. Ayesha Mian Akram, PhD
Sociology 375: Sociology of Ethnicity and Racialization

- After each phase, students discussed the reflective prompts in the workbook in small groups, probing their learning around challenging concepts like privilege, power, and inequality.
- Reflections centred on their skill-based learning and connected to course content related to colonialism, systemic racism, structural inequalities, and immigration.
- The instructor facilitated small and whole group discussions, prompting connections with course material as well as consider the applicability and marketability of inclusivity skills in all areas of life.

CASE 3: Debate (Constructive Dialogue)

Module Constructive Dialogue

Dr. Jim Dewald, PhD
Strategy and Global Management 591: Strategic Management (Capstone)

- After completing the Explore Phase, students participated in a collaborative in-class quiz (Kahoot) to test their knowledge.
- Students directly applied their constructive dialogue skills in a structured debate class activity. The debate centred on a case-study relevant to the course material. Students formed small groups with half of the group debating one position and the other a different position.
- Following the debate students were given in-class quiet time to reflect on their application of the skill and document their learning in their student workbook.

Decision 7: Implementing Multiple Modules

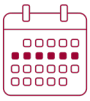
In courses that use modules to enable skill development and where the module's content is not the focus of the core course materials using one or two modules is recommended.

It is possible and common to use three or four modules in courses that emphasize transferable skill development or where the modules are used as core content. When multiple modules are used:

- Some customization of the workbook is strongly encouraged to avoid repetition.
- Deadlines for each phase of the module, and feedback on the Explore phase help to set expectations.

The completion schedule can be set so that students complete the phases in sequence (by learning phase example below) or complete the modules in sequence (skill example below).

By learning phase



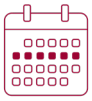
Timeline

- Skill A & B Explore phase – Due week 1
- Skill A & B Apply phase – Due week 5
- Skill A & B Reflect phase – Due week 6

Customization

With this approach, you can combine multiple workbooks into one, grouping the Explore sections together, grouping the Apply sections together, and offering only one Reflect phase that references all skills. This avoids some repetition.

By skill



Timeline

- Skill A Explore phase – Due week 1
- Skill A Apply phase – Due week 2
- Skill A Reflect phase – Due week 3
- Skill B Explore phase – Due week 4
- Skill B Apply phase – Due week 5
- Skill B Reflect phase – Due week 6

Customization

No combining of workbooks required.

Field Notes

- There is a limit to how many modules a student can effectively do at one time.
- **Skill development takes more effort than learning new content** because it requires repeated practice, reflection, and the application of knowledge in new or ambiguous situations. Unlike content learning, which often involves understanding or memorizing information, skill building demands deeper cognitive work and the unlearning of old habits.
- Allowing choice can be valuable when the focus is on skill building generally. However, sometimes it is helpful to narrow choices to more closely align with student skill level and learning outcomes.

Sequence modules strategically so students can focus on one or two skills at a time and avoid workload peaks.

Patterns That Worked

- In courses intentionally focused on transferable skill development, using up to four modules allows students to meaningfully practice the skills, while assigning more than four may overwhelm learners and reduce the depth of engagement per skill.
- In courses where transferable skills are not the core learning outcome, using one or two modules has proven effective. This allows students to develop skills without detracting from required content mastery.
- Making all or some of the modules available to students to pick from and requiring completion of a specific number of modules is effective in work-integrated learning (WIL) courses or courses with a lot of autonomy and varied learners needs.

Case Study: Multiple Modules

In a Skills Credit Course, four modules were used to enhance learners' skill development. Two modules were used in the first half of the semester and two in the second half.

Consistent with the Learning Phase example on the previous page, the instructor combined the workbooks from the Problem Solving and Communications modules into a single workbook. They accomplished this by copy-pasting the questions from one Student Workbook into the other, then updating the Table of Contents at the very end.

Communication

Problem Solving

Final format of student workbook

- **Explore phase (1 week):**
  - Problem Solving
  - Communication
  - *Instructions added to submit workbook with complete Explore*
- **Apply phase (4 weeks):**
  - Problem Solving
  - Communication
  - *Instructions added to submit workbook with completed Explore and Apply*
- **Reflect phase (1 week):**
  - Problem Solving
  - Communication
  - *Instructions added to submit completed workbook*

This timeline encourages quick completion of the skills learning and more time for application.

The instructor further customized the workbook by combining some questions (e.g., How have your Problem Solving and Communication skills improved over your experience?) and added instructions to submit the workbook after each phase. They used three separate dropboxes to collect workbooks after each one of the three learning phases (Explore, Apply, Reflect). Configuring the submission process this way clarified that students were to maintain one workbook and made submission expectations very clear.

An added benefit for the instructor was witnessing students' progress from one phase to the next.

This approach was repeated in the latter half of the course with the Self-Management and Metacognition modules.

Decision 8: Customization

Customization is encouraged. FUSION has a Creative Commons licence that requires appropriate credit and allows users to remix, transform, or build upon the original materials. You can use parts or all the content and adapt it, with attribution.

Case Studies: Customization

Case 1: Synchronous teaching of content

- The instructor used Explore phase content to create slides used during two classes of 1.25 hours each
- Self-reflection activities were in-class activities
- Apply and reflect questions were used for in-class discussion groups

Case 2: D2L webpage content

- Specific content from the Explore phase was built into HTML webpages in a learning management system (D2L)
- The module's examples were altered to focus on relevant applied learning contexts
- Workbook was customized to match

Case 3: Explore phase only and customized workbook

- Applied learning was a group project and students were asked to analyze their collaboration skills using the content of the module
- Students' reflection on their collaboration as a team was part of a group presentation
- Only the Explore phase was used
- Workbook was adapted to shorten the number of questions
- Full workbook was submitted at the end of term for pass/fail grade

Field notes

- Customization isn't necessary, but simple changes to language in the student workbook makes the module feel more integrated and connected to the course.
    - **Example:** Customize questions to link content to the course and substitute "applied learning" with the course expectations, such as "capstone project" or "in-class activity."
- The workbook can be long, for both student-workload and assessment time.
- Changing aspects of the module to in-class activities increase student engagement, and reduces grading workload.
    - **Example:** In-class reflection using student workbook questions for participation marks.

You can leverage the module format with customization.

Learn the skill with the Explore phase, which has the core content and the self-assessment to create awareness—typically, instructors use it as-is before the application of the skill. Ensure it is completed using a knowledge check quiz, the workbook submission, or make it critical pre-work to a grade assignment or in-class activity.

Application of the skills can happen in many ways, from existing course activities to curated in-class activities around the skill to in-class discussions on the Apply phase. You have lots of choices, and you may already be assessing application.

Reflection is core to the module. It is recommended to assess some form of final critical reflection, whether it be the full or partial student workbook, an in-class reflection activity, or a reflection question added to a final paper or exam. **Making it worth grades is important.**

Patterns that worked

- Distill the workbook, and adapt modules to fit your class context. Cut down workbook questions to reduce length for grading and student time.
- Supplement or replace the Apply phase with an in-class activity to make more explicit connections.
- Embed application and/or reflection into existing course structure to reduce additional marking.

Conclusion

Instructors often used the module as an opportunity to bring in on-campus supports. Each expert can speak to skill development and share additional resources students can access on campus.

Examples of potential partnerships, depending on the module of choice and instructor goals, include:

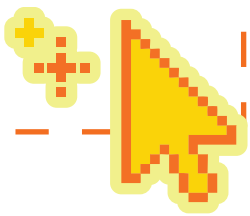
- Future Skills to help students understand the importance of skill development.
- Centre for Career and Personal Development & Faculty Co-op Offices to connect to career development resources and help with the job search process.
- Student Wellness Services to connect students with wellness resources.
- Libraries & Cultural Resources to support students with AI and Digital Literacy training.
- Student Success Centre to provide students with academic and learning supports.
- Student Accessibility Services to provide support and resources for students with disabilities.

The best way to get started is to experience the modules yourself, reflect on your own experiences as a student, and the trends you are seeing in your students today. Start small with your implementation and pilot a module. Through a pilot you will see how students interact with the learning opportunity and gain insight into skills-related challenges students face, allowing you to better align your course design with enhancing students' skill development. Congratulations on taking this step forward to help students build self-awareness, critical reflection, and skill articulation.

SUPPORT

Future Skills: future.skills@ucalgary.ca

Taylor Institute for Teaching and Learning: Book consultation



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Appendix A: Rubrics

Sample 1: (Step-up) rubric

1	2	3
Describes their response to learning about the skill in the Explore phase.	Describes their response to learning about the skill in the Explore phase and reflects on a personal experience involving the skill in the Apply phase.	Describes their response to learning about the skill in the Explore phase, reflects on a personal experience involving the skill, and describes how this learning will be applied to future situations.

Rubric created by Dr. Georgina Lau, Carleton University (2024).

Sample 2: Holistic pass/fail

Rubric Criteria	Does not pass	Pass	Exceeds
All three questions are addressed	Not all questions are answered	All questions are answered	All questions are answered in-depth and thoughtfully
Ideas are expressed and expanded on using relevant, detailed, and specific experiences	Lacks clear examples or speaks in generalities	Clear examples are presented	Clear examples are present and connected to deeper reflection on past experiences or patterns
Depth of thought in articulating your learning from your experience	No learning articulated	Clearly articulated learning and why it matters	Learning is articulated in larger context of career growth and life

Rubric adapted from DEAL model by Ash and Clayton (2009)

Sample 3: Detailed rubric

Rubric Criteria	Unsatisfactory (0)	Satisfactory (5)	Good (7.5)	Exceeds (10)
Completeness of workbook	No questions are answered	Not all questions are answered and there are large pieces of context missing from the workbook	All questions are answered, but with a lack of depth and thought	All questions are answered in-depth and thoughtfully
Ideas in workbook are expanded on using relevant, detailed, and specific personal experiences	No specific examples provided	Some clear examples provided but the ideas are general and not detailed	Clear examples are provided, and some detail is provided for elaboration	Strong, clear, detailed examples are provided and connected to deeper reflection on past experiences or patterns of self-management
Depth of thought is demonstrated in articulating learning from personal experience and reflection	No learning articulated	Some learning articulated	Learning is clearly articulated and some connection to why it matters are made	Learning is clearly articulated with strong connections to and in the larger context of the student's career growth and life
Proofreading	The writing in the workbook is inappropriate or unintelligible	There are a lot of errors in the workbook, which shows that the workbook was not proofread prior to submission	The workbook is polished, but there are some grammatical errors, which shows there was room for further proofreading	The workbook is polished and free of grammatical errors. This shows that the workbook has been reviewed and proofread closely prior to submission

Rubric adapted from DEAL model by Ash and Clayton (2009)

Sample 4: Long pass/fail

Self-Assessment × Reflect & Write × Activities × Reflection × Structure		
Criteria	**Meets expectations**	**Does not meet expectations**
Self-Assessment Result *Explore* and *Reflect* sections	__ The student's Self-Assessment Result scores are accurately filled in within each "Phase." It is not necessary to show how the scores were calculated.	__ Some or all the Self-Assessment Result scores are either missing or clearly inaccurate.
Reflect & Write (R&W) *Workbooks have the following Reflect & Writes:* • *Explore* 1 per section plus 1 overall • *Apply* 1 per section plus 1 overall • *Reflect* 3 overall	__ R&W sections are all answered. The preference is that they are answered according to the students work placement reflection, but if that is not possible, the student states why it is not possible and then applies it to another informal context. (The instructions in the "Applied Learning" section of the workbook were followed.) __ R&W is positioned based on the student's work placement experience for the Apply & Reflect Workbooks __ R&W may be in point form, if it is understandable, and completely responds to the prompts; the student's response is more about the ideas and critical thinking __ R&W response is written descriptively with appropriate amount of detail and justification. In particular, the "overall" R&W questions summarize insight while including specific and actionable plans to move forward.	__ R&W sections are incompletely answered. Within the Apply and Reflect, several of the responses have little information or are blank, including those that could reasonably be answered given the student's work placement. (The instructions in the "Applied Learning" section of the workbook were not followed.) __ R&W is not positioned based on the student's experience for the Apply & Reflect Workbooks. It appears that the student should have been able to use the skills in their work placement but has not expressed that in this section. __ R&W does not make sense (whether in point form or not); response does not address prompts. Extraneous, irrelevant detail may be included frequently. __ R&W response is not written descriptively and/or does not contain appropriate detail and/or justification; there is no indication that the answer is anything beyond the surface. It may appear that the student's work was rapidly done at the last minute.

Self-Assessment × Reflect & Write × Activities × Reflection × Structure		
Criteria	**Meets expectations**	**Does not meet expectations**
Activities *Apply* has 4 activities for each learning module (12 total)	__ Each of the activities has most of the questions (including all the subparts) addressed, specific to the student's work placement for this course. (The instructions in the "Applied Learning" section of the workbook were followed.) __ If the student was struggling to apply the information to the work placement, the student may have substituted in what it might look like, given their performance in a similar situation. For example, "____ has not happened yet (support). It would happen in the following WIL situation (support). This is very similar to (describe experienced situation, results)."	__ Many of the activities have multiple questions (or parts of questions) that are not addressed. Or the answers do not relate to the WIL placement without explanation. It appears that the student should have been able to use the skills in their work placement but has not expressed that in this section. (The instructions in the "Applied Learning" section of the workbook were not followed.) __ Within the Activity sections, several of the responses are either blank or begging for more detail.
Self Reflection Questions *Apply* has a block of questions for each learning module	__ Each of the tables is filled out to address the prompts. The appropriate response is clearly indicated (e.g., marked with an X).	__ Many of the tables are not completely filled out, and/or there is no distinction between the items.
Technical Structure	__ Workbook is complete and responded to in an understandable way and presents the student's ideas in a clear, concise, and well-organized manner. Point form is fine. The ideas are thoughtful, understandable, and logical. Spelling and/or grammar errors are not consequential as the intended meaning comes through. If the student follows through with their plans, there is tremendous potential to improve in this area of learning.	_ Workbook is incomplete and/or responded to with significant writing errors (i.e., spelling etc.) such that the writing is not understandable or illogical. The workbook does not present the student's ideas in a clear, concise, and well-organized manner. The answers may also be too short to demonstrate a thoughtful reflection. In its current form, there is limited potential for the critical reflection to move the student forward in this area of learning.

Rubric created by Astrid Eckstein, University of Calgary (2024)

Appendix B: Case Study: Flipped Classroom

Level of integration: Moderate integration

Faculty: Arts

Course: GEO280: Thinking Spatially in a Digital World

Module used: Digital literacy

Learners: Multi-level multi-faculty undergraduate students

Learning outcome integration: No additional outcomes were added, module enhanced digital literacy which was an intended outcome of the course

Assessment activity:

- Workbook
- In-class activity

Grading & Feedback:

- Grading was 1 point for Explore phase completion, 3 points for in-class participation, 1 point for Reflect module completion
- "Pass / fail – all answers must be complete to pass"
- No partial points provided
- No feedback provided

Applied Learning: "When completing this module, please consider how you are applying your digital literacy skills in GEOG280 and other academic courses. You can also apply your Digital Literacy skills to informal contexts and situations, such as personal relationships, participation in team activities or clubs, etc. Your applied learning can involve more than one context or situation."

Implementation by Dr. Victoria Fast, University of Calgary (2025).

Pacing: Recommended pacing with one due date for the final workbook

- Explore phase complete BEFORE in-class activities
- Apply phase had a class date
- Reflect phase was due 2 weeks later (full workbook was due)

Student Prep Activity

Students completed the Explore module on their own time

In-Class Activity

- Students were in table rounds of four to six people (balance out tables).
- One page table name and all students' full names (this was handed in to the TA at the end). Late attendance over 20 minutes docked marks (2.4/3).
- One printed document for each student with the five discussion questions customized from the Apply section of the workbook.
- Students were expected to independently track notes on their pages. Implied that everyone had to write their own ideas down and submit to be assessed for a grade but at the end we told them they keep their goals/ planning sheet and just hand in the table names. For participation they got the full three points as it was Pass/Fail.
- Instructor is a team keeper and announced new questions (perhaps add a little flavour to the question to set expectations).
    - Two minutes to independently think and capture notes and five minutes to discuss as a table.
    - Some big room conversation happened to set the stage and recap some core concepts from the Explore phase (example: Who can tell me what misinformation is? Class defines it before the activity. Instructor gives a real-world example of misinformation).
- Given it was a large class debriefing each question was not possible. Instead, students were asked to add their main takeaways from the module to an online collaboration platform (i.e., Slido (https://www.slido.com/) to create a word cloud to showcase their learning.
- If students are not in attendance: the makeup activity was to complete the Apply phase independently and submit to the dropbox.