

## Using Reflection to Support Student Learning and Assessment

### Why ask students to reflect?

Bass Connections experiences are often fast-paced and multi-faceted, requiring students to adapt to unfamiliar modes of inquiry or new styles of collaboration. **Reflection is an indispensable part of the learning process** that encourages students to think carefully and critically about what and how they're learning. Reflection can also be a useful **tool for assessment** and can provide helpful **feedback** to team leaders on team operations.

For students, reflection provides the opportunity to:

- practice communicating their experiences, ideas, questions and goals in writing
- describe and examine the trajectory of their research
- synthesize what and how they are learning
- consider their individual contribution to their team and how the team is functioning as a whole
- ask questions about the research process
- examine what they do well and enjoy about the research process and where they might improve
- articulate a path forward towards future research goals

For team leaders, reflection can:

- provide a tool for student assessment
- clarify what students are finding compelling or challenging about the research process
- help assess group health and team dynamics
- identify any adjustments that might be needed to the project plan, team operations or research goals in light of student interests, ideas or concerns

### When to incorporate reflective assignments

Reflection can be integrated into the research process in many ways. Team leaders may decide to ask their students to keep a research journal where they regularly document the research process and respond to weekly reflective prompts. Other team leaders may ask students to reflect after completing milestone assignments or at critical junctures around mid- or endpoints of the semester. Still others may consider incorporating reflective assignments when they want to gauge how students are responding to a particular set of readings or research concepts or methods; how they're working together as a group; or whether they have questions, concerns or new ideas about how to take the research forward.

Based on the goals of the reflective assignment, the table below provides timing recommendations. Please note that these are just suggestions; team leaders should adjust this timing based on their project plans and goals.

Goal of reflection	Timing option(s)
Ongoing record of research process and student learning (i.e., research “journal”)	Weekly or biweekly; consider guiding student reflection with prompts relevant to that week’s work
Assessment of student comprehension of key concepts and/or research methods	2-4 weeks into the fall semester and/or around periods of intensive training or literature review
Assessment of team health and/or an individual’s contribution to the team	4-6 weeks into each semester; end of the first semester; and/or after milestone assignments

### What forms can reflection take?

Reflections can take many forms and can be completed by individual students or as a group. Depending on the goals of reflection, team leaders may choose to ask their students to free write or they may provide prompts to get students thinking about particular aspects of their experience. Ideally, these prompts will direct students to describe and examine what they’ve learned, how they’ve learned it, why that learning matters and how they might use that learning in the future (short- and long-term).

Team leaders can customize the **reflection prompts** below according to what they’re hoping to learn from students:

- Describe the research process so far:
  - What did you do and why?
  - What goal were you trying to accomplish?
  - Who did you work with and how did you work together?
  - Did your experience differ from your initial expectations? If so, how and why?
- What academic concepts or research methods did you learn and how will they contribute to the team’s research goals?
- What knowledge, skills, or assumptions did you bring to this research? Were your assumptions challenged? If so, what new knowledge or assumptions did you form and did they require you to change your project approach?
- What aspects of this work were most exciting or challenging and why?
- How did your strengths and weaknesses affect your ability to accomplish your goals (both at the individual and group level)?
- How did you contribute to the group? Do you think you were an effective group member and why? Is there anything you would change about how the group works together?
- What did you learn about conducting research on complex challenges that require interdisciplinary approaches?
- What did you learn about conducting research while working with an external partner – and/or – while working with human subjects?
- What questions do you have going forward? How will you go about answering those questions?

## How to assess reflection

Team leaders who choose to use reflections as graded assignments should consider, and clearly explain to students, how the reflections will be assessed. Options include:

- **Grading on completion:** This approach can give students the freedom to be candid about what's working and not working without worrying that they'll be penalized for identifying issues or revealing that they're unsure about research material or methods. This may help team leaders identify what students are finding exciting, challenging and/or frustrating. If team leaders decide to use this approach, they should still be sure to read, consider and address the questions/issues that arise in student writing in order to demonstrate the value of the reflection process (and the feedback loop that reflection creates) and show students that their thoughts are being taken seriously.
- **Grading on quality:** Alternatively, some team leaders may choose to use reflections as a means by which to assess a student's critical thinking and comprehension of new material, as well as their ability to dig deeply into an issue, consider alternative points of view and assess the significance of what they're learning. Team leaders interested in assessing student reflections in this way should clearly communicate their expectations to students and consider providing students with a rubric that describes how their reflection will be evaluated.

Reflection rubrics may contain categories such as:

- *Clarity:* The student clearly expresses complex ideas and provides illustrative examples.
- *Logic:* The student can follow an argument or line of reasoning to conclusion, identify areas for further inquiry and identify reasonable routes towards their research goals.
- *Depth:* The student can articulate the complexity of a research question or problem and make relevant connections.
- *Perspective:* The student can examine a problem from multiple points of view and carefully consider different disciplinary perspectives.
- *Significance:* The student can draw conclusions and articulate the significance of their findings.