

# Reflection papers

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## What are reflection papers?

A reflection paper is an academic essay in which you reflect on a course experience, such as a lab series or a project. To *reflect* (in the sense in which this word is used here) means that you critically examine your experience and explicitly articulate what you have learned.

## Why write reflection papers?

Writing a reflection paper offers you the opportunity to process an experience and think about how it has helped your learning. As Gibbs (1988) writes, '[i]t is not sufficient simply to have an experience in order to learn. Without reflecting upon this experience it may quickly be forgotten or its learning potential lost.' Reflective writing also trains your analytical skills, as it requires you to link your experience to the course content. For me (the examiner), a reflection paper is a means to assess to what extent the experience has helped you achieve the learning objectives for a part of a course.

## How to write reflection papers?

There are many ways to write reflection papers, but in my courses I ask you to structure your paper into three parts as follows:<sup>1</sup>

1. *Describe* your experience (lab series, project), in fair detail and as objectively as possible. Focus on things that let you illustrate what you have learned.
2. *Examine* your experience and link it to the relevant course content. See below for prompts that will help you with this.
3. *Articulate* your learning. Respond to the following prompts: What did you learn? How, specifically, did you learn that? Why does this learning matter?

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<sup>1</sup>This structure is based on the DEAL Model for Critical Reflection (Ash and Clayton, 2004).

The following sections will provide some more details about these parts.

### Step 1: Describe your experience

This part lays the foundation for your reflections. Your goal should be to make your experience present by describing it in an *objective* and *detailed* way. Do not jump straight into interpretations, but focus on the facts. However, do not simply recount the events; try to also remember specific circumstances that were significant for your learning. The following prompts may help you with this:

- When and where did the experience (lab series, project) in question take place?
- Which learning objectives relate to the experience?
- How did you prepare yourself for the experience?
- If you wrote any code, what exactly did you implement?
- If you performed any experiments, which results did you get?
- Whom did you work with or talk to?
- Which feedback did you get from the teachers?

### Step 2: Examine your experience

This is the part of your reflection paper where you move beyond a mere summary of your experience. Instead, your goal here should be to critically examine your experience and to explicitly link it to relevant course content. The following prompts (adapted from [Duke Service-Learning, 2018](#)) may help you with this. They require more and more complex reasoning abilities (from merely identifying relevant content to evaluating its usefulness), and you should try to target the most complex prompt that you feel confident responding to.

1. What specific concepts or skills from the course are relevant to this experience? Explain them so that someone not in the course could understand them.
2. How exactly did these concepts or skills emerge in this experience? In which specific parts of the experience?
3. How were you able to apply concepts and skills from the course in the context of this experience? How did this help you make sense of the experience?

4. What similarities and differences are there between the perspective on the situation offered by the course material and the situation as it in fact unfolded?
5. How does this experience enhance your understanding of the course material? Does it reinforce or challenge your prior understanding?
6. Based on your analysis, is the course material or your prior understanding of it adequate? What reasons might there be for any inadequacies?

### Step 3: Articulate your learning

In the last part of your paper you sum up your reflections by explicitly articulating what you have learned. You do so by responding to the following three prompts:

1. What did you learn? Express an important learning, not just a fact. Explain how your reflection on the experience has led to an enhanced understanding.
2. How, exactly, did you learn it? Connect your learning to specific details in your description or insights from your examination.
3. Why does your learning matter? Consider how your learning has helped you achieve a relevant learning objective, or how you will be able to use it in the future.

### Additional tips

Here are some additional tips that can help you write a good reflection paper:

- Make sure that you understand the context of the experience that you are writing about. What were the learning objectives for this part of the course? Knowing the answer to this question will help you maintain focus.
- Before you start with the paper, review any material related to the experience and jot down things that stand out in your mind. For example, think about what you found especially interesting, surprising, or hard.
- Make it understandable. Imagine that you are writing the paper for a student who took the same course some other year, and whose experience may differ from yours (different lab series, different project).
- Keep it short and sweet. The suggested length of a reflection paper in my courses is 1,000 words (ca. 2 pages of text). This means that you will have to make a selection of what to describe and analyse.

- Work with the text. I will assess your paper as a piece of academic writing. Stick to one central idea per paragraph. Aim for a good flow. Use an academic language (but do use first person pronouns). Check for typos and errors in grammar.
- Plan ahead. A good reflection paper needs work, and work takes time. For a paper of 1,000 words, I expect you to invest approximately 8 working hours. Make sure to reserve that time in your schedule. Do not wait until the last minute.

## How are reflection papers assessed?

While the exact assessment criteria that I apply to reflection papers vary somewhat with the course and the experience (lab series, project), my assessment will always be based on the general criteria that I have spelled out on page 5. Their definitions hopefully give you a good idea of what I am looking for in a reflection paper. Your grade will be based on a holistic assessment of these criteria. For a pass grade, your paper must not be 'below expectation' with respect to any of the criteria.

## References

- Sarah L. Ash and Patti H. Clayton. The Articulated Learning: An Approach to Reflection and Assessment. *Innovative Higher Education*, 29:137–154, 2004.
- Duke Service-Learning. DEAL: Model for Critical Reflection Assignment Sample. Retrieved 4 November 2018 ([source](#)).
- Graham Gibbs. *Learning by Doing: A Guide to Teaching and Learning Methods*. Oxford Further Education Unit, 1988.

	<b>Below expectation</b>	<b>Meets expectation</b>	<b>Exceeds expectation</b>
<i>Description</i>	Not clear what happened or what was done. Lacks details and examples.	Understandable to students who made similar experiences. Details or examples.	Understandable to someone not in the course. Explains all technical terms.
<i>Examination</i>	Does not identify specific course concepts of relevance to the experience.	Considers how specific course concepts emerged in the experience.	Develops an enhanced understanding of course concepts in light of the experience.
<i>Articulation of Learning</i>	Not clear what was learned, how it was learned, or how the learning is relevant.	Clearly explains what was learned, how it was learned, and how the learning is relevant.	Develops specific and assessable goals for how to use or act on the learning.
<i>Formal aspects</i>	Paragraphs are disorganised. Several errors in grammar and punctuation. Mostly informal language.	Each paragraph has a central idea. Few errors in grammar and punctuation. Mostly academic language.	Paragraphs have a good flow. Virtually no errors in grammar and punctuation. Academic language throughout.