

Subject Labor

Analysis of a PHYS 1090 Topic

Purpose

To examine and monitor your own learning.

Method

Explain the physics of a content unit in this class and recount your process of learning it.

Overview

You will examine your learning and understanding of one of the early topics of this course. The final product will be a two-part written report. The first part is an exposition of the scientific content of the unit, and the second is a narrative of how you came to your understanding of the content.

To create a good report, you will need to pay close attention to your own thoughts and feelings and as you try to understand the science. You will also need to recollect your prior learning of the topic. Some questions about yourself to keep in mind are

- How do you know if you understand something?
- What makes something difficult or easy for you to understand?
- What determines your feelings about something you are trying to learn?

You will first submit a rough draft of your report to your group, which will review it with you in class. You will then discuss your draft with me before the final report is due.

Graded Components

Rough draft: Presented to your group members prior to final submission. Your group members will review it and give you constructive comments.

Instructor Conference: Discuss the labor before its final submission.

Feedback: Your reviews of your group members' reports. You will help your group mates create analyses that are correct, thorough, complete, and personal.

Final report

Topic explanation: Thoroughly explain the physics behind all of the unit's objectives. Give the evidence for the explanation, point out internal consistency, and explain why other views (that is, misconceptions) are inadequate. Leave no doubt that you fully understand the material.

Narrative: Recount the process of how you came to understand the material. Include any conceptions you had before this class and how they arose, such as previous schooling and

experience. Report the thoughts and feelings you had as you worked through each activity of the unit.

What to Do

Choose the unit you will examine. You have some freedom in this regard; all students in a group must examine different units, chosen from units 1–4. Please work out the apportionment amicably with each other. Only with reluctance will I arbitrate intractable disputes.

Be sure to gain an expert command of the objectives of your unit. Keep records while the unit is in progress so that you can remember the details for the report.

Write up a draft thoughtfully answering the questions described below. Submit your draft to your group and me, and obtain drafts from your group mates. Evaluate your group mates' drafts. Review your draft with your group and me. Make any revisions you believe are wise, and submit your final report.

Dates and Deadlines

Aug 26	Labor introduced
Sep 2	Units chosen
Sep 23	Rough drafts submitted to group members and instructor
Sep 24–30	Instructor conference
Sep 25	Group discussion of drafts
Sep 30	Feedback reports due
Oct 2	Written reports due

Scoring

Rough Draft 10%

This must merely be present and complete at the due date.

0-3	Missing more than two components.
4	Missing two components.
8	Missing one component.
10	Explanation discusses all unit objectives; narrative includes description of prior understanding; narrative describes thoughts and feelings for all activities.

Instructor Conference 10 %

Show up on time, get the credit.

Feedback 10%

Feedback to the members of your group on their rough drafts should focus on content, NOT mechanics (this is a *rough* draft!). You may note that grammar or usage problems exist, but they should not be the focus of your comments. Comments should show that you understand the topic of the unit and that you have read and carefully considered the entire draft. Constructive comments should clearly identify the parts discussed, specifically describe what is effective or ineffective and why, and suggest specific improvements if appropriate.

Write in paragraph form the comments and suggestions you made for each of your group mates' drafts. Discuss each draft in turn.

0–5	No mention of science. Advice on draft, if present, is limited to mechanics.
6	Advice on draft is not limited to mechanics. Errors in scientific understanding are evident or comments are holistic or vague. Specific examples or evidence are rare.
7	Demonstrates scientific understanding. Points out specific problems with the draft but offers little constructive advice.
8	Demonstrates scientific understanding. Advice on the draft refers mainly to content.
9	Demonstrates understanding of all but one of the unit objectives or offers specific, constructive advice on all but one section of the draft.
10	Demonstrates understanding of all unit objectives. Offers specific, constructive advice on all sections of the draft.

Since each student comments on several drafts, the score received is the average of the scores for the separate drafts.

Written Report 70%

Reports must be typed, double-spaced. Reports deviating from this format will not be accepted. (That means zero credit.)

Topic Explanation 45%

This section explains the science behind all of the objectives for the unit.

0–20	Incomplete or incoherent. Ignores an objective or is unintelligible.
25	Addresses all objectives and can be easily understood.
30	As above, plus is correct in explanations.
40	As above, plus explanations clearly demonstrate content mastery.
45	As above, plus is original, clever, or especially engaging.

Narrative 25%

This section recounts how you came to understand what was described in the topic explanation. It includes your knowledge and learning prior to the unit in this course, your experiences in the course unit activities, and the thought processes that brought you to your current understanding.

The two scores for this section address the main themes to be covered. “Prior Development” is your analysis of your understanding of the subject matter *before* taking this class: what your understanding was, what your feelings were, and how they came to be. “Unit Chronology” is your story of going through the unit: what you thought and felt as you did the class activities, read the text, and studied. The narrative of your thoughts should contain the evolution of your understanding, including any confusion or blind alleys. The narrative of your feelings should recount your emotional and physical state going into each activity (tired, distracted, worried) as well as your emotional and physical reactions to the activities.

Prior Development 10%

0–5	Prior feelings not described, or prior knowledge not addressed.
7	Prior knowledge and feelings about the topic are described.
8	As previous, plus prior education pertaining to the topic is also described.
9	As previous, plus the development of your understanding and feelings is described.
10	As previous, plus the reasons for your feelings and understandings are also examined.

Unit Chronology 15%

0–6	Some parts of the unit are not described.
9	All activities included in the unit are identified.
12	Your thoughts and feelings about the unit during each of the unit’s activities are described.
15	The reasons for your thoughts and feelings during each of the unit’s activities are examined.

The score for the written report is adjusted by its ESWE multiplier.