

Sample Journal 6

Year: 2024/2025

Grade: G10

Semester: 2nd Semester



Question 1: You have noticed that one of your teammates has experienced a sharp decline in performance. What advice would you give him/her to help him/her regain his/her performance?

Conclusively, the declines that the individuals pass with perniciously affect their performance, which usually causes disappointment to the students. This semester I faced this dilemma, and I will share my acquaintance in it.

This semester, one of my teammates faced a problem with writing. In the previous semester, he was famous for his writing skills, however, his level in writing declined. I suppose that he was lazy in developing himself in writing. Nevertheless, he was very upset and disappointed about this decline.

For helping him, I asked my psychological teacher in the school, he advised me to advise him not to be upset and not to think that this is the end, furthermore, I have to advise him to develop himself in writing. Some websites and courses train you on writing, for example, a website called "tharous" for the vocabulary, and a free course on the internet called "within academic English from the beginning". This guidance would encourage his spirits. Fortunately, he responded to our advice and began to develop himself again.

In conclusion, supporting friends is essential in the STEM community, because we see each other plenty of time, thus, supporting teammates will raise their performance and make them more productive.

Grade: Blue

Feedback:

Strengths:

- 1- The response is structured as an essay, with a clear introduction, body, and conclusion.
- 2- It answers the question directly and clearly and includes examples such as Tharous website or the online course.
- 3- It attempts great punctuation, grammar rules and advanced vocabulary.
- 4- The conclusion is insightful. It encourages supporting each other as one community.

Weaknesses:

- 1- The response uses a few overly complicated vocabulary like “Conclusively”, “perniciously” and has some grammar mistakes like “my acquaintance in it” → “my acquaintance with it”, “my psychological teacher in” → “my psychology teacher in”, “”
- 2- The sentence “he responded to our advice and began to develop himself again.” is sort of vague. It tells rather than shows. It’s not clear how he actually improved. A better alternative would be giving an example to his development like listening to an English podcast or joining the English Club or something similar.

General Notes:

There are no extra notes.

Question 2: According to the EDP process, you are supposed to be in the stage of constructing your prototype which is the most important stage. Explain two prototyping steps you made.*

Unequivocally, the construction of the prototype passes through various steps, and for scientific research and projects, it is common that the prototype is edited plethora of stages.

Nevertheless, the steps of construing our prototype are: (1) planning for the prototype, (2) editing the planned design+ and (3) editing the design (prototype).

1) First, the planning for the prototype passes through several steps. For example, as the team chose Pumped Hydro Storage (PHS), we were confused about the source of energy that raises the water from the upper reservoir to the lower reservoir. First, we chose the concept of the difference in pressure to raise the water, but we realized that it is not realistic. Second, we selected the windmill to raise the water, but after research, we realized that it is not practical in real life, and it requires a volume of more than 0.5 m^3 . Ultimately, we chose a battery to support the system with energy to raise water (because PHS is a way of storing energy, not generating energy).

2) Second, when construing the prototype, we first made the upper reservoir at a height of 0.5 m from the lower one, but we comprehend that this height is not suitable for the design requirements (because we the stored energy is calculated by this formula: $\text{mass} \times \text{acceleration due to gravity} \times \text{difference in height}$). Thus, we edit the height to 1 m.

3) Ultimately, we designed the tube that transfers water from the upper reservoir to the lower (this is that generate energy) one on, the side of the container (reservoir), after some calculations we comprehend that the maximum energy production is when the tube is in the bottom of the reservoir, so we excavate the reservoir and put the tube in the bottom.

Grade: Blue

Feedback:

Strengths:

- 1- The response is divided into an essay: an introduction and a body.
- 2- It provided logical reasoning behind each choice, supported by capstone-related concepts.
- 3- It mentioned mistakes, how they were learned from, and improvements were implemented.
- 4- Real examples and numbers were provided.
- 5- Good use of sequence markers (first, second, ultimately...)

Weaknesses:

- 1- The question asks for two steps, but the response lists three. Replacing one of them with a conclusion is considered better.

- 2- While the steps are explained properly, each in its own paragraph, the summary of steps mentioned in the introduction is vague and doesn't align well with the body content.
- 3- Some word choices are uncommon like "plethora" and "Unequivocally", and a few words are used repetitively like "but" and "ultimately", consider using other alternatives.
- 4- The response is too long and over the word limit. As it's almost 300 words.

General Notes:

The English level is strong. However, there are a few grammatical inaccuracies. For example, "Nevertheless, the steps of construing" → "Nevertheless" means in any case, and it is out of place here. It should be removed. Also "construing" → "constructing", "passes through various steps" → "goes through various steps", "plethora of stages" → "a plethora of stages".

Additionally, there's too much focus on trial and error without reflection. The writer lists choices that didn't work and then says the better ones, but they never explain why they are better or how they improve the prototype.

Question 3: In (CH.1.09), You have studied the physical properties of different elements. Explain four physical properties of the materials you use in constructing your prototype and why these properties are suitable for your project. *

This learning transfer focuses on the physical properties of the elements. This LO emphasizes seven characteristics: (1) malleability, (2) ductility, (3) texture, (4) bounce, (5) conductivity, (6) elasticity, and (7) strength.

Aluminum: The team chose aluminum to be the element used in the reservoirs. (1) The aluminum has a relatively small density, hence, its mass per unit volume is suitable because it is light and suitable for the weight of water. (2) Its rusting is relatively slow, and the outer layer that rusts prevent the rusting of the inner layers. This is essential because the water fasts the process of rusting. (3) it has high elasticity which guarantees that it endures the high pressure of the water (the elasticity of the aluminum is about 10 million N/m²), nevertheless, the lower part of the reservoir have to face 5880 Pa plus the atmospheric pressure (1.013 ×10⁵ pa) and (4) it is metal so its conductivity is good, thus it can be used in some electrical circuits that copper is not suitable for it.

Carbon fibers: Carbon fibers are very suitable for the turbines. We learned in the field trip that carbon fibers prevent deposition of sand on the wind turbine plates, which is a physical property known as “texture”. Correspondingly, we use carbon fibers to prevent the deposition of sediments and impurities in water on the plates, moreover, it has high stamina (shear strength) that prevents the sand from excavating it.

Copper: It is used in electric circuits because of its ductility (a physical property about drawn into wires), high electrical conductivity, lower electrical resistance, and malleability the ability to shear into sheets to make it very thin.

Grade: Blue

Feedback:

Strengths:

- 1- The response begins with a brief introduction outlining the key physical properties related to the learning outcome.
- 2- It mentions several metals and describes their specific physical properties and how they were used and for which components of the prototype. It provides scientific and detailed descriptions.
- 3- Linking material choices to a real-world experience like the field trip showcases deep learning and applied understanding.
- 4- Providing real measurements like aluminum’s elasticity (10 million N/m^2) or the pressure on the lower reservoir part adds precision and shows a solid grasp of the topic.

Weaknesses:

- 1- The question asks for four specific physical properties used in the materials of the prototype. However, the answer provides three materials (not properties) and all the properties associated with them.
- 2- Some physical properties are not clearly defined or accurately used.. For example: stamina in the carbon fibers section is not accurate. Saying “shear strength” or “strength” only is enough.
- 3- While copper is discussed with its physical properties, it’s later stated that aluminum was preferred over copper. This weakens the reason of using copper as a core example. Other mentioned properties, like electrical resistance or ductility, are not explained in enough detail.

General Notes:

Overall, the English, grammar and punctuation are strong, with a few exceptions like “mailability” ➔ “malleability”, “because the water fasts” ➔ “because the water speeds up”.

Additionally, listing too many properties in an unstructured way makes the response harder to follow. Organizing them clearly and focusing on the four main properties would improve clarity and coherence.