

Essay Questions for Qualitative Conceptual Models Pre-experiment

Part 1: To be able to respond to these questions, you and your research team members each need to have completed your own conceptual models about your research project.

Part 2: In the second phase, your goal is a well-explained model. For each question, first think about and jot down your ideas, then each take a turn to describe your response to the other. As you get additional ideas, write them down too. After discussing your responses with a member of your research team, write an essay that responds to each of the following questions. Please put your name on the essay.

1- Explain why each component depicted is important in the system or subsystem you are studying. Make sure each component is labeled. Describe the relationships among all of your components by putting a number besides each arrow and logically explaining each number below the model. What are the ideas you have about how this aspect of the ecosystem works? (In other words, explain what you think is going on by telling a story about it).

2- Using the components in your model, write your research hypothesis.

a) Describe how you would test this hypothesis in your experiment.

b) Make a prediction about what you expect your results will be.

3- Discuss and illustrate on your model each of the following:

a) Show feedback.

b) Choose one component in your system and describe how it might change due to climate change. Describe any indirect effects you can expect due to this change.

Essay Questions for Qualitative Conceptual Models Post Experiment

Part 1: To be able to respond to these questions, you and your research team members each need to have completed your own conceptual models about your research project.

Remember, your goal is a well-explained model. For each question, first think about and jot down your ideas, then each take a turn to describe your response to the other. As you get additional ideas, write them down too.

Part 2: After discussing your work with a partner, write an essay that responds to the following questions. Please put your name on the essay.

- 1- Explain why each component depicted is important in the system or subsystem you are studying. Make sure each component is labeled. Describe the relationships among all of your components by putting a number beside each arrow and logically explaining each number below the model. What are the ideas you have about how this aspect of the ecosystem works? (In other words, explain what you think is going on by telling a story about it). What was the outcome of your experiment? How did it compare with your initial prediction?
- 2- Use the components in your model to refine your research hypothesis to make a secondary hypothesis.
 - a) Describe how you would test this refined hypothesis in a subsequent experiment.
 - b) Make a prediction about what you expect your results will be.
- 3- Discuss and illustrate each of the following:
 - a) Show feedback.
 - b) Choose one component in your system and describe how it might change due to climate change. Describe any indirect effects you can expect due to this change. .

These next two questions require you to compare your post-experiment model with the one you drew at the beginning of the experiment:

- 4- What differences can you see between your first and final model in terms of the variables you chose as important to model in your experiment?
- 5- What do you attribute to why your understanding shifted? How did the research project help? How did the modeling help you?