

Peer Learning / Case Study Project

Overview

One of the most valuable ways to learn a subject really well is to explain it to someone else. This is especially true in game theory, where there can be important subtleties and nuances which you can gloss over when you first learn a topic. In this project you will develop a case study experience on a topic covered in this class. The goal of your case study should be two-fold:

- To **teach students** an important topic, tool, or skill we have learned in game theory...
- ...using a real-life worked example, **motivated by your ideas and experiences**

I call this the "case study experience". You get to choose the case study you want to explore, and what you will focus on explaining to students about it. You can find some examples in the "Hall of Fame" for motivation.

Your experience will consist of:

1. A short video-recorded presentation or activity which you will present your case study to an audience of your fellows students, and explain the key concepts or skills you are trying to convey.
2. This must include your worked example in which you apply your ideas to your model, like one we might encounter in a lecture, case study, or assignment.
3. A set of follow-up questions, with solutions presented as part of the video, like you might find on an assignment.

You will complete these tasks with a small (4-5) group of fellow students. Your video presentation should be about 15-20 minutes in length.

Part 0: Forming a Group

- You will be allowed to choose your own group; I will ask you to submit your preferences for groups online after the midterm.
 - You can find a post on Piazza which can help you organize your groups
- Students who are not able to find a group will be matched up based on their time zones
- Your group should all agree to attend one of the labs together (it doesn't matter which one)

Part 1: Learning Experience Proposal

The most important part of your project is the design of your case study – you have a great deal of flexibility, so get creative? Once you have selected your topic, think about

how you could teach other students about this topic in a way which helps them learn something new, or a valuable approach. Consider the following questions:

- What is the most difficult part of my topic?
- Are there any “tricks” or common misconceptions?
- What is the most important thing to remember about my topic?
- Is there a process or system to use when analyzing my topic?
- What are my own thoughts or experiences about this topic?

Once you’ve thought a little bit about these questions, and discussed it as a group, write down 3-6 “learning objectives” that you want your students to take away from your lesson.

- Use active verbs (e.g. at the end of this lesson you will be able to...understand, answer, solve, define, explain, etc.) when writing your objectives.
- Be specific and precise about what students will learn in this experience, and be realistic - not overly broad!

Now, think about your learning objectives, and the ideas earlier. What kind of presentation could you create to help students learn about this? How could it be presented? What kinds of demonstrations will you do? Here are some ideas:

- Develop your case study, where you analyze a real-world problem using a simple model, then make it more complex
- Examine different perspectives on a model, with questions for each variation
- Film a short video introducing the concept, with “iClicker” like questions at different points for students to ask questions about.
- Develop an infographic illustrating how to work through your problem, then demonstrate how to use it.

Your learning experience should take about 15-20 minutes to complete in total. Once you have decided on a plan, you should fill out the Proposal Form below, and submit it on Canvas; you may also need to schedule a meeting with the instructor to discuss your idea. You will schedule a date for your presentation (if necessary) in this meeting, so make sure everyone is there.

Your proposal should be as detailed as possible – make sure you explain who is accountable for each part of your experience. Your work should also be clearly distinct from what we have done in class or in labs.

Part 2: Learning Experience Creation

The next step is to create your experience, then share it with your classmates.

- In your proposal, you will have identified what materials needs to be created and who is responsible for them – make sure you follow through on this part of your proposal.
- Focus on making your explanations, directions, and activities as clear and simple as possible. Spend extra time and care ensuring that everything is unambiguous and straightforward.
 - Make sure you are very clear about your learning objectives in your presentation.
- Equally important, make sure everything you are saying is correct, and your analysis is right. Don't make mistakes!
- Finally, focus on making it engaging for your audience; try to hold their attention and keep it fresh or interesting for the other students.

You can get creative - if you have an awesome idea, let me know!

Part 3: Follow-Up Questions

Finally, you must have at least three short questions on your topic, using the learning objectives from your experience, including “suggested” solutions to your questions.

- Make sure your follow-up questions are challenging but not impossible, and test *all* of your learning objectives (across all three). You can include varying degrees of difficulty (easy, medium, hard) but they should not be simple definitions or trivial in nature.
- Ensure that your solutions are clear, concise, and correct. No mistakes!
- Make the questions as clear and simple as possible; define and explain potentially unknown terms in simple words (e.g. what's a Nintendo Switch?).

These questions should be your own work, and not adaptations of other people's ideas. Present them and the solutions as part of your video.

Assessment

The criteria for this project are graded on a P/F or 5-point (Excellent, Very Good, Good, Poor, Fail) system.

Criterion	Grade	Pts
<i>Initial Proposal</i>		
Was the initial proposal handed in on time?	P/F	1
Was the initial proposal of acceptable quality?	P/F	2
Were any required changes or amendments made after submission?	P/F	3

<i>Learning Experience</i>		
Were all of the learning objectives clearly identified in the experience?	P/F	2
Were the learning objectives specific, using action verbs appropriately?	3-points	3
Were the explanations and illustrations used clear and straightforward?	5-point	5
Were the directions for the students clear and easy-to-follow?	5-point	5
Did the experience show careful planning and preparation ahead of time?	5-point	5
Was the experience free from errors or mistakes in the analysis or explanation?	5-point	10
Did the experience show creativity, hard work, or uniqueness?	5-point	5
<i>Experience Presentation</i>		
Was the presentation or activity well-organized?	5-point	10
Was the experience conducted on time?	P/F	5
Was the presentation professional and well-designed?	5-point	5
Was the experience presentation easy to follow?	5-points	5
Was the presentation engaging?	5-points	5
Did the presentation introduce and explain the learning objectives?	P/F	3
Overall, was the presentation an effective learning experience?	5-point	10
<i>Follow-up Questions</i>		
Were the questions appropriately challenging?	5-point	5
Were the questions clearly written?	5-points	5
Were the solutions (and questions) free from errors?	P/F	2
Total		100

You will also complete a peer evaluation, which will be used to adjust the score up or down if there are issues identified. This will ask you to evaluate your team-mates and their contribution to the project.

- If you have serious issues with your team-mates, you should bring it up to the instructor if you cannot solve them yourselves

Initial Proposal Outline:

Your proposal should include all of the following items; you can find an example at the end of this document. You should have a very clear idea of what your experience is, and what you will need to do before completing this document.

- The proposed **title of your experience** and the **intended topic**
- A list of your **group members** indicating who is the group coordinator
- A **communication plan**, indicating:
 - How you will plan to communicate with each other outside of meetings (e.g. email)
 - When responses should be expected (e.g. within 48 hours)
 - The member responsible for coordinating and arranging meetings
 - A backup method of communication in case your main method breaks down
- A **proposed schedule** for your meetings:
 - This should be an minimum of two proposed meetings
 - After each meeting, you should keep an **action log** (see below) and minutes. These will be submitted along with your peer evaluation
 - This should include how you will meet
- An **experience proposal** outlining as specifically as possible:
 - What your proposed experience will entail
 - How it will be presented
 - What deliverables need to be produced for the experience
- A list of **responsibilities**, outlining which parts of the experience each person is accountable for
 - This should be as detailed as possible (at this point)
 - This should also be fair, with everyone taking on an appropriate part of the project.
- A **conflict resolution** statement, explaining how you will deal with problems or challenges during the project, such as (i) someone not completing part of their work to an appropriate standard, (ii) lack of communication.

We will go over your plan in our meeting, at which point you will make any required changes, then submit your final proposal.

Project Proposal Example

Title: Case Study: Mutually Assured Destruction

Group Members: Students A, B, C (coordinator), D

Communication Plan:

- We will communicate with one another using email; as a backup, we will use text messages
- We will respond to emails within 24 hours during the week and 48 hours on the weekends
- Student C will be responsible for organizing our meetings and keeping minutes

Meeting Schedule:

- We will meet once a week for 30-60 minutes to go over tasks and outline next steps; this will mean 6 meetings in total
- We will meet using Microsoft Teams and use audio and video chat

Experience Proposal:

- We will develop a simple case study model of “mutually assured destruction” in nuclear conflict
- This will involve giving a short introduction to the subject, and developing a simple game which models the situation
- We will solve the model using the Nash equilibrium concept, and analyse the results
- We will write some questions which extend the analysis (with solutions)
- We will deliver this as a video recording, with slides
- (A real proposal should be more detailed than this)

Responsibilities:

- Student A is most familiar with video production, so they will have the responsibility of editing and producing the final recording
- Students B and C will be presenting in the video
- All of the students will develop and solve the model together
- Student D will develop the background material and create slides
- Students A and C will write the questions and solutions
- Student C will be the coordinator

Conflict Resolution:

- If we have an issue (i.e. student not completing their task) we will first discuss the issue with one another and try to come to a mutual agreement

- If we cannot come to a mutual agreement, we will take a vote on a solution (with Student C acting as tie-breaker); we all agree to abide by such a vote
- If a vote does not resolve the issue, we will reach out to the instructor for assistance
- We will make a note of any issue in our action logs during our meetings, so that we have documentation of issues