

CS19929 Creating Computer Games for Learning

Design Warmup - Learning Trajectory

The purpose of this exercise is to define the learning content in your educational game. You need to choose:

- What subject you are going to teach (history, ethics, finance, mathematics, programming, arts, etc.)
- What age group you are targeting
- What specific topics or aspects of that subject you are going to tackle - e.g., “I want players to learn about ethics in my game” is a VERY broad statement. You need to narrow it down - recall the exercise we did during lecture today (math → algebra → division)
- You need to show that you understand the educational aspects of the subject you are going to teach, especially learning trajectories and the gradual, staircase nature of teaching / learning a subject.

Learning Trajectory Make a learning trajectory diagram for the topic you chose. You can use some graphic design platform (e.g., Figma, Canva, Google Slides, PowerPoint, Paint) or draw it.

- Start with brainstorming a list of learning goals (e.g., skills or knowledge) for the topic you chose, then (roughly) sort them in order of least to most difficult or advanced for your target users to achieve.
- Make sure your trajectory starts with your target users' existing relevant skills on the left-most side and progresses through knowledge they would learn in a game like yours (your game won't need to cover all of this).
- This needs to be an actual diagram like the [handout example in class](#) or [examples in this resource document](#).
- Each learning goal in your trajectory needs to be as specific as those shown in the given examples (see above).
- Make sure you clearly separate your learning goals into different levels (e.g., beginner, intermediate, and advanced)
- Make sure you have sufficiently broken down the skills/knowledge and articulated them clearly.

Summary Write a paragraph describing your sources and methodology for creating your learning trajectory. It cannot be just made up out of thin air – you need to draw upon existing examples from credible sources to identify learning goals in your trajectory and justify the reasons why you have created it in that way.

- For in-class / academic content, you can use national curricular standards for that content area.
- For out-of-class / non-academic content, you could draw upon existing online resources and extract the learning goals and orderings that those use.
- Make sure cite your sources in some way (e.g., a list of links to your resources at the end of your submission)

Submission: Submit your learning trajectory diagram and the summary paragraph to Gradescope.