Unity Student Projects – Case Studies

What practical advice would you give to a fellow educator doing a group project in Unity for the first time?

Group or pair students based on their desired Unity use case

For my students, I typically paired them. I did a survey at the start of the course to determine what usage of Unity they want to do. Then I paired them based on their desired usage and let them figure out the project from there. The deliverable was a working application of an approved proposal. They had nearly the entire 15 week course to work on it.

Make your project structures fit your course

I always remind students that it is very rare for one person to make a game and that it takes a team and good collaboration to make a successful game. In each of my Unity classes, there will be at least one group project. For lower-level courses, I manually assign students to groups and try to ensure that each group has at least one student who has a skillset in a specific area, say for example one artist, one programmer, etc.

The timeline of the projects differ by class. For example, our Intro to Game Programming course has a group project assigned after mid-term and takes about 6 weeks to complete. In our exploration course, students work in teams to create a rapid prototype in 4 weeks, after which the groups are mixed up again, and a new 4-week project is assigned, for a total of 3 4-week projects. In our Game level design course, students work as a group the entire semester to create a multi-level game in which each student works on a single level of the game, but each level must work cohesively with the overall game. Lastly,

our senior course is a two-semester (16-week) course in which the entire class works together like an indie studio to create a vertical slice of a game.

Use version control to monitor individual contributions

Group work is not usual for my students, who are adults with diverse project preferences. However, when they discover a product that appeals to them both, we pair them up and require them to use Git or a similar tool to monitor each member's input.

Require project concept and activities documentation

The way the students are grouped depends on the type of video game. In general, most teams are made up of 4 students, where they deliver a project concept document and a schedule of activities. It is important to check that the project the students propose is achievable in the defined time.

Mirror industry practices such as Sprint meetings with each group

Do not let students group themselves. They will always want to pair with their friends and that doesn't always go as planned. Manually assigning groups assure that the groups are diverse and that each group has at least one member that has a specific skill set required for the project. It is also important to check for accountability. It's easy for the workload of a group project to be very skewed. To remedy this, we use GitHub to track issues, and each issue is assigned to specific students in the group. As an instructor, I can check the pull requests of each student to ensure that everyone is working on the project. I also like to do quick sprint meetings with each group and ask each member to provide updates on what they are working on, and how the overall project is going.

Group students based on game interests

For courses that involve video game design or development, I recommend the following strategy to group the students: Each student should write on a digital whiteboard (Example: Padlet) the names of their three favorite video games and accompany each post with an image or gameplay video of the chosen video game. Once all the students have completed the board, the teacher should sort the video games by genre or subgenre. Based on these categories, you can then form groups that take into account the students' preferences.

Structure in project management

Allocate each student to the role of Project Manager on a rotating basis throughout the project. Every week the PM gives a state of the project report to lecturer 3. Recommend communication tools such as Discord, Trello to be used by groups 4. Define project brief / specification in such a way that each group member is responsible for clearly defined tasks/functionality / asset creation etc. These tasks can be individually focused and/or group focused such as integration tasks or a chain of tasks in a typical workflow 5. Get everyone to present as a group.