Game playtesting, Gameplay metrics
(Based on slides by Michael Mateas, and Chapter 9 (Playtesting) of *Game Design Workshop*, Tracy Fullerton)
Upcoming Events

- Chelsea Howe: More Than A Feeling: Affective Design and the Future of Games
  - Wednesday, February 8
  - 11am, E2 180 (Simularium)
- February 28: Visit by Microsoft Studios
  - Game crits by staff from Microsoft Studios
  - Discussion of career opportunities
Upcoming deadlines

- Thursday (today, Feb. 2): end of Sprint 1
  - By 9am, Friday, Feb. 3, Sprint Burndown chart for Sprint 1 should be in final state (that is when I will perform my walkthrough of the lab)
- Friday (Feb. 3): Sprint I report
  - More on next slide
  - Details on class website
    - [http://courses.soe.ucsc.edu/courses/cmps171/Winter12/01/pages/sprintreport](http://courses.soe.ucsc.edu/courses/cmps171/Winter12/01/pages/sprintreport)
  - Due by 9am, Saturday, Feb. 4
- Friday (Feb. 3): Start Sprint II
  - Start sprint planning activities
- Friday (Feb. 3): team status reporting
  - Due by midnight
  - Report on team activities this week
- Monday (Feb. 6): Sprint 2 plan
  - User stories, broken into tasks, which have been estimated and prioritized
  - Remember to add a user story for developing game website – need to have rough framework done by end of Sprint 2
  - Also need user story for developing a gameplay testing plan in Sprint 2
  - May want to start work on automated gameplay metric gathering (due by end of the quarter)
Sprint Report

- The output of a Sprint Retrospection meeting
  - Meeting held after the end of every sprint
  - Provides time to reflect on what happened, determine improvements
- Questions to be answered:
  - What things should we stop doing?
    - Actions/activities the team did that were harmful, hurt progress
  - What should we start doing?
    - Actions/activities that will improve how we do work
  - What is working well that we should continue to do?
    - What is working well, and shouldn’t be touched?
  - What work was completed, and not completed?
    - User stories that were completed, not completed
  - What is our rate of completing work?
    - Story points completed, ideal work hours completed
    - Story points/day, ideal work hours/day
    - Average story points/day & ideal work hours/day across all sprints
    - Final sprint burndown chart
Playtesting

- Playtesting is the only way to determine if your game is
  - Internally complete
  - Balanced
  - Fun to play

- Playtesting should be performed early in the process
  - With physical prototypes
  - With computational prototypes
  - With the actual game, in all stages of development

- At early stages of design, it is ok to test with yourself and with confidents (friends), but as design progress, you must test with outsiders (people you don’t know)
Recruiting playtesters

- Ask friends of friends

- Prepare an email to send to the undergrad game list

- Find people in your target audience
  - People who spend money on games like yours

- If you have enough people interested, you can actually screen applicants
  - Short survey about kinds of games they play
  - Hobbies
  - Quick conversation to see how articulate they seem (if they can’t communicate with you, they won’t be much use)

- Diversity is good – sample the entire range of your target market

- For many playtest situations, you can re-use playtesters, so establish a good relationship
  - Easy trick: provide snacks at playtest sessions
Playtesting session

- Change your mindset – you are no longer the proud designer, you’re an investigator who’s job is to learn what needs to be fixed with the game

- Playtesting with individuals is best, but you can do it with groups

  - Don’t over-explain your game – let them learn by playing
    - Your game should stand on it’s own
    - Let players make mistakes – you’ll learn more if you speak less

- A playtesting script can help you to stay a researcher, rather than a sensitive designer
Playtesting script

- Welcome the playtesters
  - Explain playtesting process, goal is to help improve your game
  - Remind the playtesters that you are testing the game, not their skill.
  - Any difficulties in playing the game will help you to improve the game

- Warm-up discussion
  - Some questions to find out about the games they play.
  - What do they like most about these games?
  - What was the last game they purchased?

- Conduct playtesting session
  - Provide as little feedback to players as possible. Give them time to try things, figure things out.
  - **Ask them to talk out loud.** Gives you insight on what they are thinking, why they are making choices.

- When they are finished playing, interview them
- Thank them
Methods of playtesting

- **One-on-One Testing** – You sit down with each tester and look over their shoulder

- **Group Testing** – Have a group play your game and you ask them questions

- **Feedback Forms** – Give each tester a standard list of questions

- **Interviews** – You sit down with each tester and give them an in-depth oral interview

- **Open Discussion** – You conduct a discussion group after testers have played the game. You take notes
The play matrix

- The play matrix can be a useful discussion tool during the post-experience interview
Using the play matrix

- You can ask players 3 questions to get discussion started
  - Is the outcome of the game determined more by chance or skill?
  - Is the outcome determined more by mental skill or physical dexterity?
  - If you could move the game more towards one quadrant or the other, which would you prefer?

- Players may be able to verbalize dissatisfaction with your game more effectively by placing games they do enjoy in other quadrants
Note taking

- Fullerton’s chapter has a good generic form for note taking
  - Separates note taking into:
    - In-game notes
      - Observations made while player is playing the game.
      - Answers to questions you ask player while they are playing the game
    - Post-game notes
      - Answers to questions you ask of players once they have finished playing the game
In-game note taking

- Some questions to ask while players are playing the game:
  - Why did you make that choice?
  - Does that rule seem confusing?
  - What did you think that would do?
  - What is confusing you?
  - What is frustrating you?

- Things to observe while players are playing:
  - Areas that are unintentionally difficult, frustrating, confusing (or, too easy)
  - Times when users needed help to continue (and why)
  - Times when players behaved in a way that is very different from expectations
  - Parts of the game users really like.
  - Emotional outbursts of any kind (good or bad)
  - Difficulty with controls
  - Software bugs (but, this should not be primary focus – are really interested in *gameplay* feedback)
Post-game note taking

- After the gameplay session, want to talk with players about the experience
  - Can be free-form, following a rough set of questions (open discussion)
  - Or, can be more focused, using feedback forms or a set questionnaire

- Questions of interest:
  - Overall thoughts on the game
  - Overall thoughts on gameplay
  - Were you able to learn how to play the game quickly, easily?
  - What is the objective of the game
  - How would you describe the game to a friend who had never played the game before?
  - What did you dislike about the game?
  - Was anything in the game confusing or frustrating?
  - What information would you have liked to have at the beginning of the game that you didn’t have?
Test control situations

- You’ll want to include support for creating specific situations for testing that are hard to achieve playing the game from the beginning
  - End of game
  - A random event that rarely takes place
  - A special situation within a game
  - A particular level of a game
  - Playing under resource constraints or with huge resources
  - New features you’ve just added

- This is one of the reasons cheat codes exist in game – they are put in during development for controlled testing, and left in afterwards
Why you must playtest
Gameplay metrics

- In addition to human-collected metrics, it is possible to instrument a game to automatically collect gameplay data
  - Exact data will depend on the specific game, and area of focus

Jungle level, Halo 3:

Colored dots show location at 5 second intervals. Each color represents a different range of time from level start. Dots are clustered by color, indicating players are making good progress through the level.

Halo 3: How Microsoft Invented a New Science of Play
www.wired.com/gaming/virtualworlds/magazine/15-09/ff_halo
Example gameplay metrics

- When and where the player avatar dies
  - Permits computing number of deaths per player, per level
  - Can overlay death locations on a map of the level, to create heat maps
- How long it takes a player to complete a level
  - Gives a good idea of which levels are longer, shorter

Heat map of deaths in Replica Island.

www.gamasutra.com/view/feature/6155/hot_failure_tuning_gameplay_with_.php
Other gameplay metrics

- Recording certain player actions (when or where)
  - Jumping, firing a gun, picking up certain items, completing a puzzle
- Recording movement of player
  - Where the player is every N seconds
- Menu choices
- How often a player accesses a help system
- Total duration of play
  - Does a player stop playing before they complete a level?
  - How long is a typical gameplay session?
- When does a player level up?

- Each specific game will have metrics that are of particular interest for that game.
Better games through better understanding: Researching games from inside the games industry

by John Hopson, Microsoft

Video of talk presented at 2010 Foundations of Digital Games Conference (FDG 2010)