

# Video Game Design

Jeff Wilson

[jeff@imtc.gatech.edu](mailto:jeff@imtc.gatech.edu)

Playtesting



# Playtesting

Game Design Workshop (4<sup>th</sup> ed.)

Chapter 9



# What is Playtesting?

- The “most important” activity in iterative game design
- It is NOT
  - Just “play the game and gather feedback”
  - Design review with team
  - QA and debugging
  - Focus group
  - Usability Testing



## Casual weekend gaming

Just “play the game and gather feedback”  
might not reveal real issues with the  
game

## Internal Design Review with team

Designer & team play the game and talk  
about the features

Need real players

## Bug Testing by QA team for debugging

QA team goes through and rigorously test  
each element of software for flaws

## Focus Group Testing

Marketing exec sit behind two way mirror

watching sample group play and discuss the game with a moderator asking them how much \$\$\$ they would pay for game

## **Usability Testing**

Systematically analyze how user interacts with your software by recording their mouse movements, eye movements, navigation patterns, etc.

# What is Playtesting?

- It is
  - Getting insight into how players experience game
  - Informal/qualitative  $\leftrightarrow$  structured/quantitative
  - Answers questions
    - Is the game functioning the way you want
    - Internally complete?
    - Balanced?
    - Fun?



## Playtesting in Industry

- Most commercial games embrace playtesting as an integral part of game development
- Valve's Half-Life Series
- Microsoft Game Studios: Halo 3
  - 3000 hours of playtesting with more than 600 players

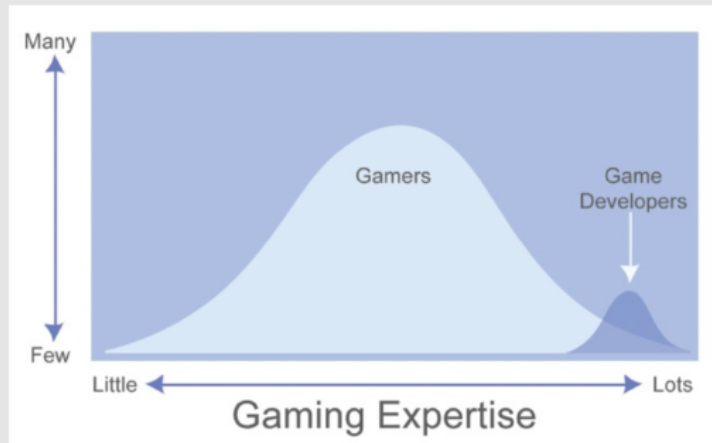


## Some Factors Motivating Playtesting

- Gaming expertise disconnect
- Emergent game play
- Rules missing needed to handle certain unanticipated situations (e.g. run out of resources, tie, etc.)



# Expertise Disconnect







## Emergent Game Play and New Rules

- First Person Shooters
- Spawn Camping
  - Random spawn locations
  - “tele-frag”
  - Invincibility
  - Pistol starting weapon
  - Etc.
- Rocket Jumping
  - Embrace or disable?

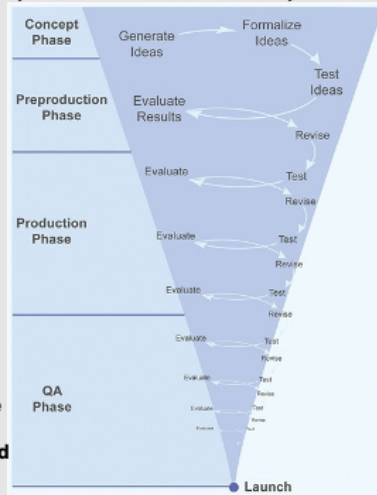


# When do we Playtest?

- Iteratively
  - Ongoing through development
- Less fundamental changes as development process progresses
- “Let’s wait till we have a beta product...Players will get the best experience”
  - NO!



# Model for iterative game design: Playtest, evaluate, and revise



**9.1 Model for iterative game design:  
playtest, evaluate, and revise**



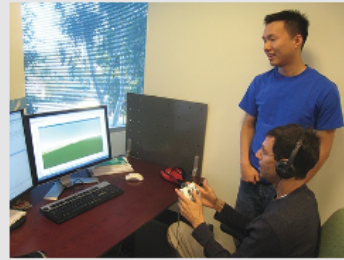
# Steps in Playtesting

- Selection
- Recruiting
- Preparation
- Controls
- Analysis



## Selection and Recruiting

- Self testing
  - Reveal glaring problems
- Then testing with friends
  - Not objective
- Then test with strangers
  - Selection is important
  - Target demographics
  - ...but widest selection possible (AOE II case study)



9.2 Friends and family playtest for a prototype of Flower at thatgamecompany. Game designer Jenova Chen explains minimal information to get the game started



AoE II case study in reference to elder playtester that never played a video game before

# Play-testing schedule

Prototyping Stage	Playtest on Your Own	Playtest with Confidants	Playtest with Target Audience
1) Foundations	●		
2) Structure	●	●	
3) Formal Details			●
4) Refinement			●



Foundation – core mechanic of gameplay

Structure – extension the foundation with rules and procedures so folks without familiarity with the full vision of the concept can play

Formal Details – Make the game functional, internally complete, and balanced

Refinement – Small adjustments to regain fun and engagement that may have been lost when introducing formal details. Also, make sure game is accessible

Functional – can someone that knows nothing about your game sit down and play it (play the game unaided by you)

Internally Complete – does your game have rules to handle every contingency? Rules to deal with exploitation?

Balanced – ideal adjustments of variables, dynamics, starting conditions, and skill requirements to achieve game's vision

# Preparation

- Design a playtest that is repeatable and consistent
- Identify what you want to test
- Identify how you will test, including what types of data you need to perform analysis



# Controls

- Control gameplay experience to force players to test a specific aspect of game mechanics
- Examples
  - Start from a particular level
  - Change frequency of events





## Running a playtest session

- Don't talk too much
  - Use a script
- Let the user make mistakes/figure things out
- “It's the game that's broken, not you”
- Think Aloud
- Interview/survey
  - Beware of leading questions
- Standardize (same for every participant)



## Running a playtest session

- Don't be defensive
  - Beware...testers will want to please you
- Groups generate ideas
- Individuals evaluate
- Can use groups, individuals, or combination



# Playtesting Types

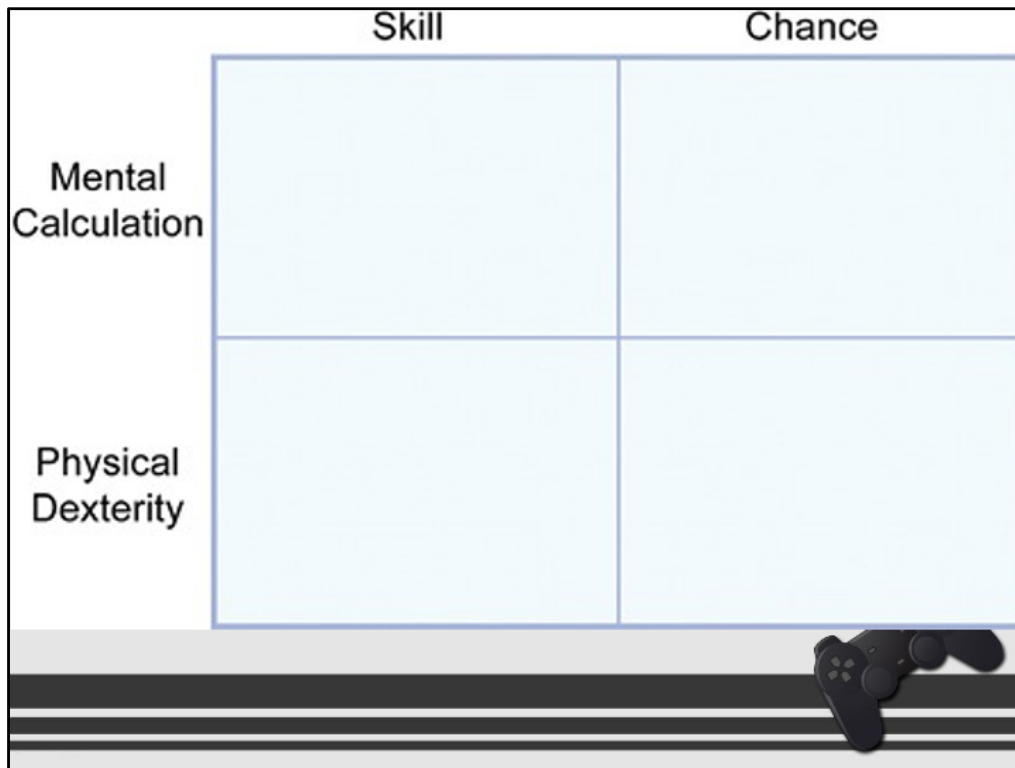
- **One-on-one** – observe individual, ask questions before/after
- **Group** – observe group play together, ask questions as they play
- **Feedback Forms** – standardized questions answered after playing
- **Interview** – structured oral interview after playtest
- **Open Discussion** – guided or open-ended discussion with group or individual
- **Metrics** – game play activity logs



# The Play Matrix


- Core aspects of all interactive experiences
- Stimulates discussion
- Have tester analyze gameplay using matrix
- Should your game be moved in the matrix?





Empty play matrix

		Skill	Chance
Mental Calculation		Go chess  Civilization  Warcraft Starcraft Tetris	poker backgammon blackjack Chutes and Ladders
		Unreal Halo basketball football Dance Dance Revolution	Operation Kerplunk pin the tail on the donkey Whack-a-mole tag Twister
Physical Dexterity			



Play matrix filled out

# Running a playtest session

- Note taking critical
  - Video or audio recording
- Interview
  - Game specific questions needed
  - Don't wear out your participant



<https://www.polygon.com/2012/10/24/3538296/data-entry-risk-management-and-tacos-inside-halo-4s-playtest-labs>

Interview Question Example	
<p><b>In-Game Observations</b> [Your thoughts as you watch the testers play.]</p> <p><b>IN-GAME QUESTIONS</b> [Questions you ask the testers as they play.]</p> <ol style="list-style-type: none"> <li>1. What did you feel as your turn ended?</li> <li>2. Does the navigation seem confusing?</li> <li>3. Why did you move to that location?</li> <li>4. Why are you pausing there?</li> </ol> <p><b>POSTGAME QUESTIONS</b> [Questions you ask the testers after they have played.]</p> <p><b>General questions</b></p> <ol style="list-style-type: none"> <li>1. What was your first impression?</li> <li>2. How did that impression change as you played?</li> <li>3. Was there anything you found frustrating?</li> <li>4. Did the game drag at any point?</li> <li>5. Were there particular aspects that you found satisfying?</li> <li>6. What was the most exciting thing about the game?</li> <li>7. Did the game feel too long, too short, or just about right?</li> </ol> <p><b>Formal elements</b></p> <ol style="list-style-type: none"> <li>1. Describe the objective of the game.</li> <li>2. Was the objective clear at all times?</li> <li>3. What types of choices did you make during the game?</li> <li>4. What was the most important decision you made?</li> <li>5. What was your strategy for winning?</li> <li>6. Did you find any loopholes in the system?</li> <li>7. How would you describe the conflict?</li> <li>8. In what way did you interact with other players?</li> <li>9. Do you prefer to play alone or with human opponents?</li> <li>10. What elements do you think could be improved?</li> </ol>	<p><b>Dramatic elements</b></p> <ol style="list-style-type: none"> <li>1. Was the game's premise exciting?</li> <li>2. Did the story enhance or detract from the game?</li> <li>3. As you played, did the story evolve with the game?</li> <li>4. Is this game appropriate for the target audience?</li> <li>5. On a piece of paper, graph your emotional involvement over the course of the game.</li> <li>6. Did you feel a sense of dramatic climax as the game progressed?</li> <li>7. How would you make the story and game work better as a whole?</li> </ol> <p><b>Procedures, rules, interface, and controls</b></p> <ol style="list-style-type: none"> <li>1. Were the procedures and rules easy to understand?</li> <li>2. How did the controls feel? Did they make sense?</li> <li>3. Could you find the information you needed on the interface?</li> <li>4. Was there anything about the interface you would change?</li> <li>5. Did anything feel clunky or awkward?</li> <li>6. Are there any controls or interface features you would like to see added?</li> </ol> <p><b>End of session</b></p> <ol style="list-style-type: none"> <li>1. Overall, how would you describe this game's appeal?</li> <li>2. Would you purchase this game?</li> <li>3. What elements of the game attracted you?</li> <li>4. What was missing from the game?</li> <li>5. If you could change just one thing, what would it be?</li> <li>6. Who do you think is the target audience for this game?</li> <li>7. If you were to give this game as a gift, who would you give it to?</li> </ol> <p><b>REVISION IDEAS</b> [Ideas you have for improving the game.]</p>

Directly from Game Design Workshop



# Playtest data

- Objective or subjective
- Quantitative or qualitative?
- What can you measure?
  - Develop clearly defined questions to answer with data
- Test control situations
  - New feature, special event, common technique, the end of the game



## Objective / Subjective / Quantitative / Qualitative

- **Objective / Quantitative**
  - Automated logging system: How many times did the player die during the level?
- **Objective / Qualitative – TRICKY!! Best avoided**
  - Informal observation of negative and positive outward expressions of emotion (grimace, smile, cheer, curse, etc.) during different parts of game as determined by playtesting observer
  - **INSTEAD, make this Objective / QUANTITATIVE through trained coding of observations**
- **Subjective / Quantitative**
  - Survey Question: "On a scale of 1 to 10, how fun was the play test session? (Circle the number you select.)"
- **Subjective / Qualitative**
  - Interview question: "What did you think of the 2<sup>nd</sup> boss?"



# Subjective Methods

- Focus Group
- Interview
- Questionnaire
- Think-aloud



# Objective Methods

- Coded observations of player behaviors (live or recorded video)
- Game logging

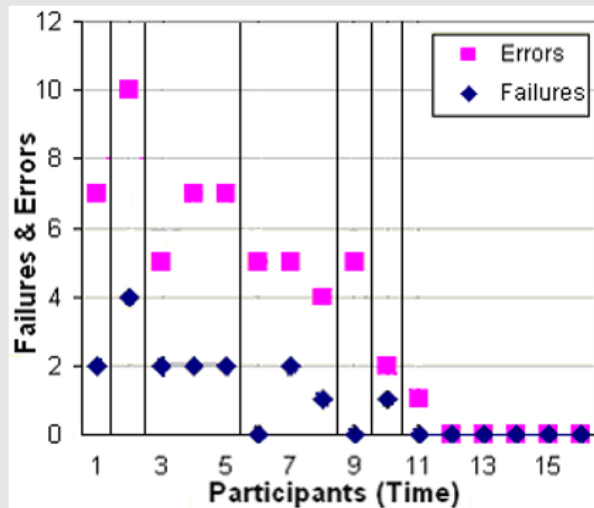


# Playtest Analysis and Visualization

- Comparison of Central Tendency of Distributions (e.g. means)
- Tables
- Graphs
- Heat Maps



## Age of Empires II Case Study



Graph of player Errors over time



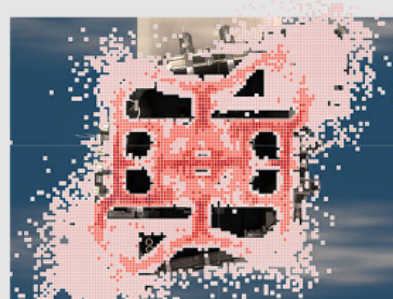
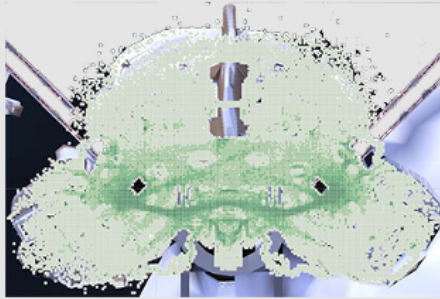
From: **Using the RITE method to improve products; a definition and a case study, (Medlock)**

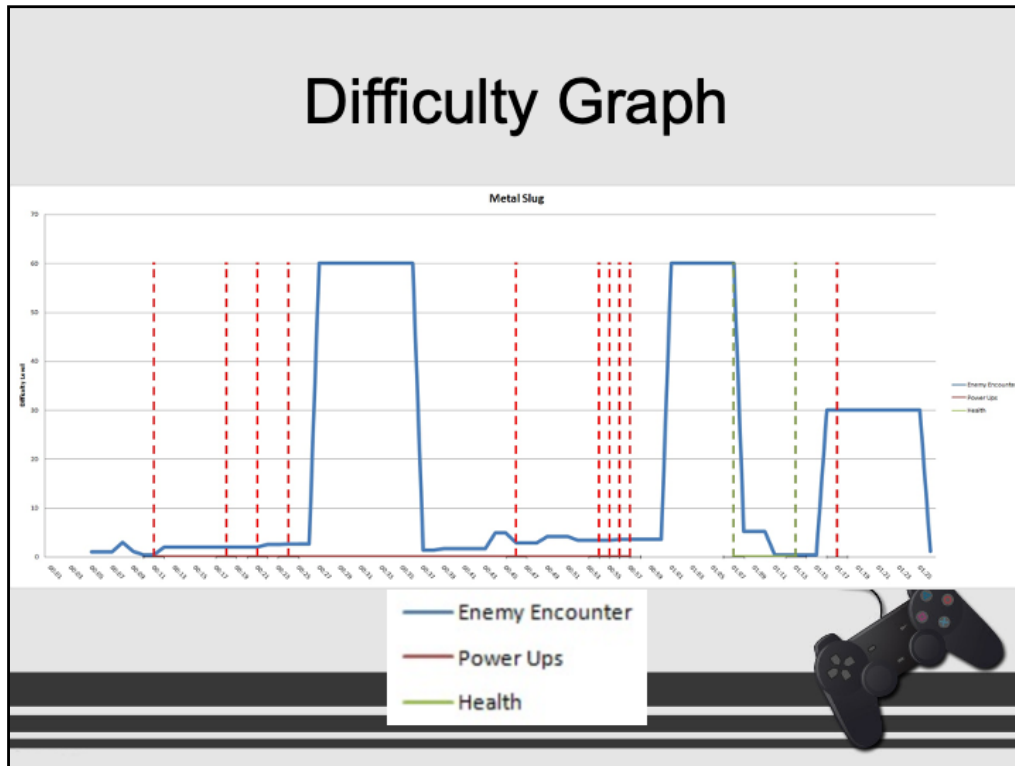
**Failures.** Software Logic Errors made that resulted in user failure to continue the tutorial—in particular those made on any item identified prior to the test by the team and usability engineer.

**Errors.** User confusion Errors made that resulted in user confusion—in particular those made on any tasks identified prior to the test.

# Heat Map

- Halo 4 Multiplayer Position of movement, deaths, etc.



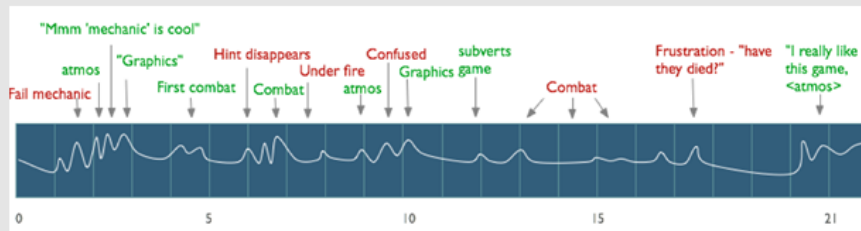


[http://www.gamasutra.com/view/feature/134917/how\\_tough\\_is\\_your\\_game\\_creating\\_.php?print=1](http://www.gamasutra.com/view/feature/134917/how_tough_is_your_game_creating_.php?print=1)



# Biometrics

- Heart Rate, Galvanic Skin Response (GSR)
- Fear, Excitement, Immersion



[http://uxpamagazine.org/biometrics\\_player\\_experience/](http://uxpamagazine.org/biometrics_player_experience/)

# Cloud Playtesting Analytics

