Game Composition

Parts for Analysis and Discussion

Brent M. Dingle, Ph.D.   2015
Game Design and Development Program
Mathematics, Statistics and Computer Science
University of Wisconsin - Stout

See also references at end of slides (if any)

Recall

- Designing a game is designing a system

- Game design and development is iterative

- Games can be described as
  - the successive layering of constraints

- Games have elements

Game Composition: Elements

- We have seen some Formal Game Elements

  - Games have **players**
  - Games are an activity
  - Games have **rules**
  - Games have conflict
  - Games have **goals**
  - Games involve decision making
  - Games are artificial, safe, outside ordinary life
  - Games involve no material gain on the part of the players
  - Games are voluntary
  - Games have an uncertain outcome
  - Games are a representation or simulation of something real but are themselves make believe
  - Games are inefficient
  - Games have **systems** (closed systems)
  - Games are a form of art

Let's consider some details and implications

Game Composition: Players

- **Games have players**, details vary
  - How many
  - Can they leave the game during play
  - Can they be in teams
  - …

Let's consider some details and implications

- Some options
  - Solitaire, PvP, PvE, One versus Many, Multiplayer Deathmatch (Monopoly)
  - Individuals versus one (BlackJack), Team versus Team
  - Predator And Prey
    - attack person on left, defend against person on right
  - Five Star
    - remove those that are not adjacent to you

Game Composition: Player Expectations

- **Players ALWAYS have expectations**

- (good) Games support, create, and reinforce player expectations through
  - Player Intention
    - Ability of the player to create and carry out their own plan based on the current situation and an understanding of the game play options

  - Perceivable Consequence
    - Feedback
    - The game world's clear reaction to the action of the player

Game Composition: Systems

- Games have/are Systems
  - a set of connected things or parts forming a complex whole
  - a set of principles or procedures according to which something is done
  - an entire group of parts that work together

- **A "good" game ties all of its parts together**

Game Composition: Goals

- Object of the game is what?
  - Players are trying to do what?

- **Goals can help tie the parts of a game together**

- Details Vary
  - Some Generic Options
    - Capture/Destroy
    - Control Territory
    - Collection
    - Solve (like Clue)
    - Chase/Race/Escape
    - Build

Game Composition: Story

- Games should have a **<u>story</u>**
  - Narrative of the game
  - Theme of the game
  - **Binds events, goals, objectives, parts together**
  - Moves player towards the completion of the game
  - Options:
    - Designer driven
    - Emergent based on player choices and actions

Game Composition: Rules

- Rules and Mechanics of a game
  - are tricky
  - are subtle
  - need details
  - must be tested
    - using mockups and prototypes
    - by 'real' players and designers and developers
  - **can bind parts of the game together**
  - **should create/support player expectations**

Rules are Tricky

- Some rules are automatically triggered
  - Happen NOT by player choice
    - Collect $200 when you pass GO
    - Draw a card at start of your turn
    - Bonus decreases by 1 every 10 seconds
    - Gravity causes things to fall when unsupported

Three Categories of Rules

- Three Rule Categories
  - Setup
    - things done once when the game begins
  - Progression
    - what can/does happen during the game
  - Resolution
    - what condition(s) cause the game to end
    - how is the outcome measured/determined based on game state when such conditions occur

Rules are Subtle

- ## Alternate rule types *(Rules of Play* by Salen and Zimmerman)
  - Operational
  - Constituative
  - Implied

  - An Example will clarify…

Rules are Subtle

- Consider Tic-Tac-Toe Operational Rules

  Are these all the rules?

  - 2 players
  - Setup
    - Draw 3x3 grid. Choose who goes first and uses X. Opponent then is O
  - Progression
    - On your turn mark an empty square with you symbol
    - Play then moves to your opponent
  - Resolution
    - If you get 3 of your symbol in a row (orthogonally or diagonally) then you win
    - If the board is full and there is no winner then the game is a tie

Rules are Subtle

- Consider Tic-Tac-Toe
  - 2 players
  - Setup
    - Draw 3x3 grid. Choose who goes first and uses X. Opponent then is O
  - Progression
    - On your turn mark an empty square with you symbol
    - Play then moves to your opponent
  - Resolution

Operational Rules

Are these all the rules?

What if someone refuses to make a mark in a square?

No rule against it...

So a **time limit is implied**,
not part of the operational rules

Rules are Subtle

- Consider Tic-Tac-Toe

  - 2 players
  - Setup
    - Draw 3x3 grid. Choose who goes first and uses X. Opponent then is O
  - Progression
    - On
    - Play
  - Resolu
    - If yo
      you
    - If th

Consider the 3 to 15 game
    Strips away the board and X and O symbols
    Using numbers 1 to 9 instead

The abstraction of the rules is the same
Defining the **constituative** rules of the game
    Making the two games the same

Operational vs. Constituative

- Distinction between
  operational and *constituative*

  - helps understand why one game
    is fun in relation to other games

    - DOOM versus Gauntlet
      - Large difference is just the camera placement
      - Similar constituative rules

Other Subtle Game Parts

- Resources and resource management

- Game State
  - Includes resource-like things
    not owned by any player
    - Like common cards in Texas Hold 'Em

- Information Visibility
  - What can the players see/know about

- "Turn" Sequencing
  - What order do players take actions
  - How does play flow from one action to another
  - Realtime (every object cannot simultaneously update)

- Player-Player Interaction

> These items often exist
> "in the background"
> of many games
>
> **And must also be tied together**

End Point of Elements

- Games are Systems
  - Game Design is Designing a System of Elements
    - Each element may influence another
    - Changing one element may change the entire game
    - The combination of elements forms a complex whole

  - A system may be a system of systems
    - a game containing games

  - The game/system state
    is dependent on the state of its elements
    - Allows for emergent behavior (from a simple rule set)
    - Difficulty in predicting *mechanics yield system dynamics*
      - Player choices are variable and affect states

Critical Analysis

- All the above help identify formal elements
  - The specifics vary
  - The lists discussed are places/things you should examine and consider

- **Identification of elements**
  via definitions, descriptions, discussions
  - **Allows for Critical Analysis**
    - Useful when looking at your own games
      - How do you know what to add or remove to make your game better?

Critical Analysis: Suggested Steps

- **Describe the game's formal Elements**
  - Do Not interpret, just state what is there

- **Describe the results of the formal elements as the game plays**
  - How do the different elements interact
  - What is the play of the game like
  - Is it effective
  - Is it "fun"

- **Attempt to understand why the designer (you) chose those elements and not others**
  - Why use a particular player structure
  - Why that set of resources
  - What would happen if this element or that element were different

Critical Self Questions

- What are the goals of the player(s) and of the game
    - What challenges are there
    - What actions can players take to overcome them
    - Where do they lead the player

- From the player perspective, is the game fair

- Would anyone want to replay the game
    - Why or why not
    - Are there multiple endings
        - Different paths to success/fail
        - Different start points
        - Different roles

- Does the game fit/play well with the intended audience

- What is the one thing that identifies the game
    - what is the one aspect that you do over and over
    - what is the one thing that sets it apart

End Summary

- **Games are systems**
  - Playing is necessary to understand
    how elements interact and how the game feels

- **Analyzing a game requires
  an examination of all the game's parts**
  - figuring out how each fits together
  - and how an experience arises from them

- **Designing a game requires
  the creation of all the game's parts**
  - If you can't define the formal elements
    then you probably don't have a game
    - you have an idea… that needs finished…

In Sum: **Iterate**
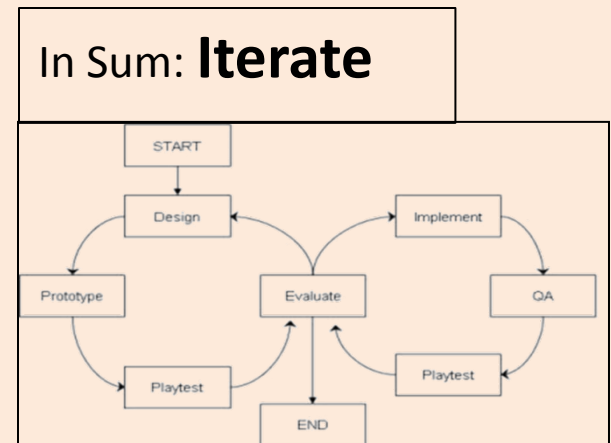
Questions?

- Beyond D2L
  - Examples and information
    can be found online at:
    - http://docdingle.com/teaching/gdd450/

    - *Continue to more stuff as needed*

References

- Some material in these slides was derived/based on material from:
  - Ian Schreiber, Game Design Concepts
  - https://gamedesignconcepts.wordpress.com/
  - Released under a Creative Commons Attribution 3.0 U.S. License
    - http://creativecommons.org/licenses/by/3.0/us/