

# TVGS Lesson Night: Game Design

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Game Designer with experience on  
a number of titles for PC, mobile,  
tablets and more

"Having ideas that sound good is trivial.

Having ideas that work is hard.

Figuring out how to make those ideas work is being a designer."

- Laralyn McWilliams

Design is both art and craft

"Scalpel and plow" skills

Two parts to this talk:

Conceptual and Practical

**Part One:  
A Conceptual View of  
Game Design**

Rules are made to be broken

Savor the subversion!

**Game Designers apply skills and concepts from various disciplines**

**Psychology, Cognitive Analysis, Systems Theory, and much more**



The study of games has led to  
disputes about how to best  
understand them

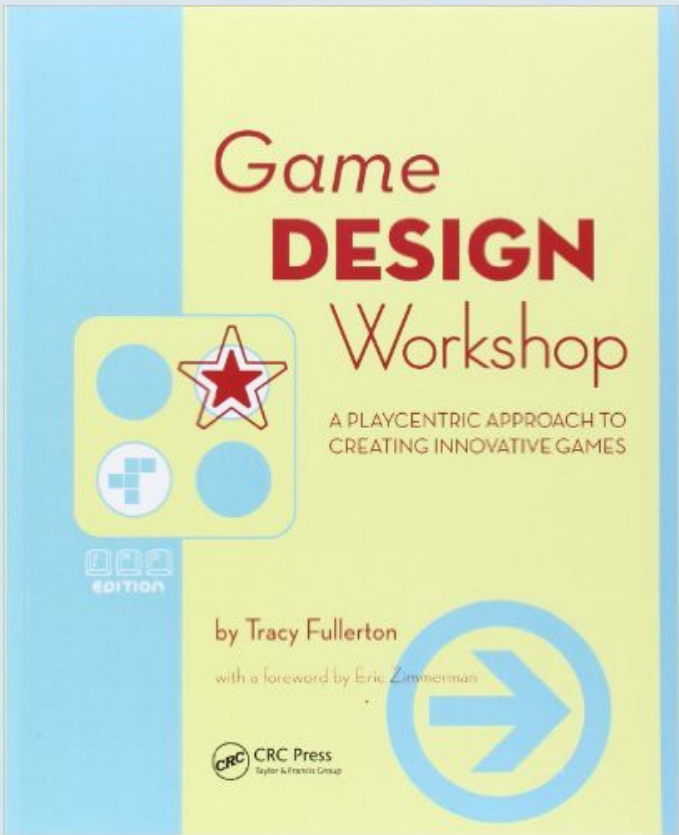
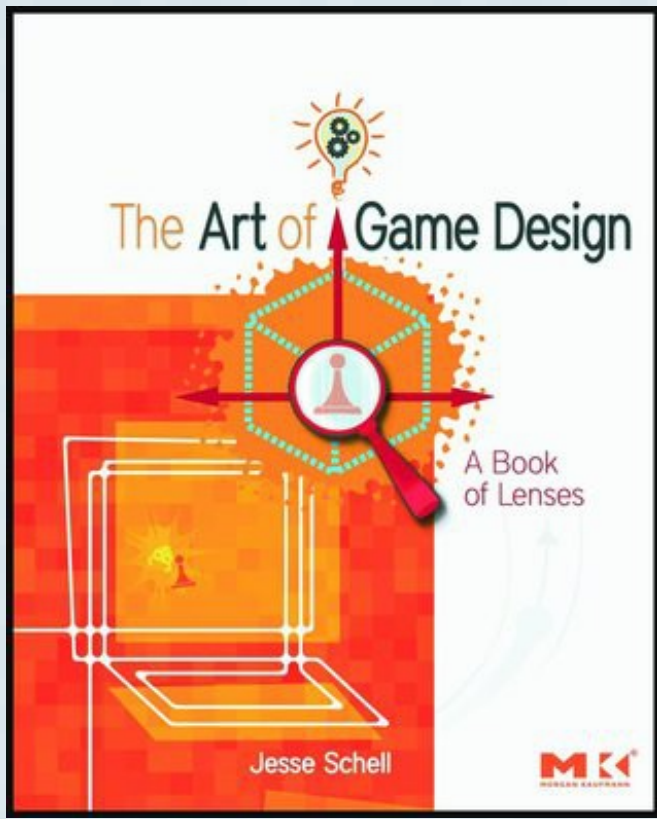
"Ludology vs. Narratology"

"Formalists vs. Zinesters"

"Plants vs. Zombies"

A comprehensive view of design requires a more holistic approach

Some of the best writing about game design involves examining it from a variety of perspectives



Game Design is often referred to as  
a second-order challenge

Designers craft a system in order to  
create a particular experience for  
the players that interact with it

# MDA Framework:

Mechanics (formal elements)

Dynamics (emergent behavior)

Aesthetics (perceived experience)

# "MDA"

Example:  
Spawn Camping

Mechanics - Spawn Point

Dynamics - Camping

Aesthetics - Annoyance

**"What does the player do?"**

**Player verbs**

**Rules, constraints and affordances**

"How does the player do things?"

Interface and controls



Underlying framework of rules and logic is often inherently abstract

Players engage with this structure via representational elements

Theme, metaphor, signifiers, entailments

Harmony between structure and representation improves clarity

Aligning rules & theme makes an experience feel more intuitive

## "Form Follows Function"

A design approach in which the representation of game elements is chosen in order to more effectively communicate their purpose

Example:  
Plants vs. Zombies

Game Designers often attempt to simulate some activity or context

The simulated context of a game is sometimes referred to as the Magic Circle

## "The Magic Circle"

The idea that games create an artificial space devoid of real-world consequences

Example:  
Resident Evil

The simulated space of a game  
allows interactivity

Participants in a game or simulation  
are expected to have agency

Play arises as players exert their agency within a designed structure

Adding goals can shift a simulation away from freeform play toward a more directed game experience

A game is a dynamic system  
comprised of elements with defined  
behaviors and relationships

At any given moment, the game  
system exists in a particular state



The complete set of all potential game states is the possibility space

Meaningful choices arise when the player has a desired game state in mind, and is able to intentionally enact decisions that move the system toward that state

As players interact with a game, they naturally construct a mental model of its underlying systems

Feedback is the crucial ingredient that allows the player to develop and refine their understanding of the game's inner structure

Game systems often contain an internal economy consisting of quantifiable resources

Resources are generated by taps and removed by sinks

Resources move through the system and collect in stocks

Balancing complex, dynamic systems is often challenging

Economies are susceptible to player min-maxing and optimization

Dominant strategies occur when one type of action is always preferable in a given context

Some dominant strategies can be addressed by providing specific options to counterbalance them

Systemic feedback loops are important sources of leverage for pushing a system toward or away from equilibrium

# "Systemic Feedback Loops"

Reinforcing loops encourage a system to continue in a direction

Example: Monopoly

Balancing loops bring a system back toward equilibrium

Example: Mario Kart

Another source of imbalance comes from disparities in skill level

Skill gaps can be mitigated by introducing an element of luck

Light random chance elements add uncertainty and variety, but leave room for player skill via calculated risk and probability assessment

When designing your game system it is important to consider player interaction patterns (e.g. single player, team competition, cooperative play)

Certain systems can incentivize competition, such as a zero-sum structure for economic resources



Other essential mechanics to consider for digital games include your approach to time and space

Real-time or turn-based? Are you including time-based challenges?

2D or 3D? VR or mobile screen?  
Screen resolution? Viewpoint?

The player's perspective has a massive impact on their experience

Perspective includes not only the camera, but also what information is made available to the player

Perfect information (e.g. chess) vs. hidden information (e.g. fog of war)

Games are systems built from various components (mechanics)

Mechanics combine to produce complex behavioral dynamics when players engage with the game

The resultant dynamics are often unpredictable and surprising

The unanticipated dynamics and behavior produced by a system are often referred to as emergence

Emergent behaviors are sometimes unwanted, but they can also frequently be astonishing and beautiful (procedural generation, speedrunning, etc.)

The player's level of engagement with a game can fluctuate over time

Key factors to sustaining interest include challenge and novelty

The psychological sweet spot between frustration and boredom is often referred to as the flow state

Pacing of challenges is tricky  
because difficulty is so subjective

Difficulty curve refers to the rate  
that the perceived challenge level  
increases as players progress

Flow exists in the middle ground  
between "trivial" and "impossible"

Advancement and mastery yield a sense of accomplishment

However, our brains are also wired to recognize patterns

Once a skill becomes habitual, repetition can quickly get boring

Novelty helps to keep players  
mentally engaged

A little variety goes a long way  
toward preventing our brain from  
switching to autopilot

However, too much variety can be  
overwhelming for some players (the  
"tyranny of choice" effect)



One technique for dealing with widely varying player skill levels is dynamic difficulty adjustment

This can be automated, or it can be manually introduced via player initiated risk/reward tradeoffs

## "Risk/Reward"

Allowing players to select a more dangerous or difficult option for a chance at a larger payoff if they succeed

Examples:

Pac Man, Smash Bros.

Games offer a variety of different rewards (cutscenes, leveling up, achievements) to incentivize play

Autotelic vs. Exotelic refers to the distinction between intrinsically rewarding activities and those that are undertaken in order to obtain a separate external reward

Many games instill an artificial sense of progression through scheduled rewards

During the design process, consider whether your game is inherently rewarding or reliant upon "bribing" the player with external rewards to keep them engaged

Learning is rewarding for players,  
but we all learn at different rates

When teaching players the  
intricacies of your game, allow them  
to "learn by doing"

Introduce new concepts gradually  
via gating and contextual hints

The extent to which players are free to exercise agency within a game environment is often referred to as non-linearity

A puzzle with a single solution is considered linear, whereas a challenge that can be completed in different ways is non-linear

Although linearity can apply to many aspects of a game, it is often discussed in terms of story

Authored content typically needs to be presented in a fixed sequence to maintain narrative coherence

Tension between story and agency

## "Ludonarrative Dissonance"

Conflict or incompatibility between the authored story and the actions performed by the player

Example:  
Uncharted



A story is non-linear if the player has agency within the narrative

Does the story branch based on player interaction? Can player choices influence the outcome?

Underlying narrative architecture can be quite complex and subtle

Designers sometimes distinguish  
between embedded and emergent  
narrative

Embedded narrative consists of  
authored "chunks" of story content

Emergent narrative consists of  
stories generated through play

## "Emergent Narrative"

Story or drama that unfolds dynamically via player interaction

Examples:

Dwarf Fortress, Prom Week,  
Tabletop RPGs

Games allow for shared authorship  
and collaborative storytelling

Players can propel the drama, game  
can monitor and respond to them

Meaning and values are embedded  
within systems and conveyed  
indirectly via procedural rhetoric

## "Procedural Rhetoric"

Expressing a personal perspective  
on a particular subject by crafting  
an interactive simulation of it

Example:  
Tomodachi Life

Self-expression and creativity are intrinsically rewarding for players

Expression can come in many forms (e.g. avatar customization, creating a unique home or vehicle, enacting personal values through story choices and play style)

When framing a game experience it helps to consider the player's role

Is there a performative aspect to the role of the player?

Are they controlling an individual character with defined traits?

Embodiment occurs when a player experiences a sense of deep connection between their own identity and the avatar they control

This sensation is closely related to immersion and "suspension of disbelief" within an interactive context



The emphasis on immersion has been criticised by some designers

Frank Lantz coined the term immersive fallacy to describe the implicit goal of achieving parity between a simulation and its subject

## "The Immersive Fallacy"

The belief that a simulation's value is based on how closely it reproduces its subject

Example:  
Execution

Immediacy and hypermediacy refer to the idea that player can find a simulation engrossing while remaining aware that it is artificial

Due to the interactive nature of games and the participatory role of the player, "breaking the fourth wall" can sometimes enhance immersion

The sensory elements of games  
are directly connected to the  
player's experience

Game feel refers to the design of  
sensory feedback, tactile input,  
controls and dynamic movement

Feedback is enhanced by juice

Different players derive enjoyment  
from different activities

Numerous designers have  
attempted to classify the various  
player types and play styles

Bartle's taxonomy of "achievers,  
explorers, socializers and killers" is  
one example that is often cited

**Part Two:  
A Practical View of  
Game Design**

A first step toward becoming a game designer is to play a wide variety of games and cultivate a critical sensibility about them

Focus on the game as a designed object, consider how each design decision is impacting your experience and how the game could be improved

An important role for a designer is to serve as an advocate for the player during the creative process

This implies that it is beneficial to have a target audience in mind, and an ability to empathise with that audience and understand their needs, desires and expectations



Even if you have a solid understanding of your target audience and confidence in your creative vision, you will need to put your game concept to the test

This is accomplished via an ongoing process of prototyping, playtesting and iterative refinement

The goal of the design process is to identify and enhance the core of the game, the beating heart that is integral to the experience you hope to create for players

Game Designers sometimes refer to the most commonly performed player actions as the core mechanic or the core loop

Great ideas can come from anyone,  
but the designer is responsible for  
determining which ideas enhance  
the core design and which are  
extraneous feature creep

Guiding lights are a small set of  
principles that should remain fixed, if  
they're altered then you are making  
a fundamentally different game

Creative Design is the process of conceptualizing, maintaining and communicating the vision behind a game idea

Common methods of communicating this vision include pitching concepts, writing design documentation, as well as creating mockups and demonstrations

Interface Design involves creating specifications for controls, menus, HUD, game cameras and more

Menu layouts and flow are often specified using UI wireframing tools (e.g. Pencil) to create mockups, while other elements may be specified by gathering references or building sample implementations

Level Design involves building the geometry of game environments, and populating them with entities such as rewards, hazards, enemies and NPCs (non-player characters)

Levels are often designed via a grey boxing layout process where collision geometry and entity positions are placed before final art

System Design involves creating, tuning and balancing the structural elements of a game including the rules, economy and object behavior

Systems can be modeled using tools like Machinations, behaviors via a component interaction matrix, and economy design is often done via spreadsheet tools like Excel

Narrative Design involves creating the world, characters and other story elements of a game, as well as defining the architecture through which players will engage with narrative content

Branching stories can be outlined visually in tools like Twine





*“The only requirement to be a game developer is to make a game. The game you create doesn’t need to take forty hours to complete, or conform to some arbitrary, narrow-minded set of standards for what constitutes a “real game”. You don’t need to become a famous designer, win the IGF grand prize, or work at Blizzard for fifteen years to legitimately call yourself a game developer. All you need to do is make something – we are all impostors in our own minds. That’s a feeling that never truly goes away, no matter how much experience you have or what you manage to achieve. Some of the most talented game developers I’ve met have struggled with impostor syndrome on a regular basis, but have somehow found a way to fight through it and continue striving to improve themselves and their output. So... Get involved, make stuff, and then encourage others to do the same!”*

Questions?