Game Designers

Understanding Design Computing and Cognition (DECO1006)
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Who are these guys?

Shigeru Miyamoto

Will Wright

Sid Meier

Peter Molyneux
What is a Game?
Types of Games

Action Games
- Arcade (Shoot’em Ups)
- First-Person Shooters
- Third-Person Shooters
- Stealth (Sneak’em Ups)
- Fighting (Beat’em Ups)
- Dancing Game
- Action-Adventure
- Platform Games

Role-Playing Games
- Turn-Based Role-Playing Games
- Massively-Multiplayer Role-Playing Games (MMRPGs)

Strategy & War Games
- Turn-Based War Games
- Real-Time Strategy
- Management Games

Simulations
- Sports Simulations
- Vehicle Simulations

Adventure Games
- Text-Based Adventures
- Graphical Adventures
Games, Toys & Puzzles

Games are rule-based interactive play
   Games often involve challenges or conflict

Toys do not come with rules
   Games can be played with toys by inventing of rules

Puzzles have one definite rule, a solution
Is “The Sims” a game?
What is Game Design?
The Process of Game Design

Imagining a possible game
   What’s the “big idea” or “high-concept”?

Defining the way it works
   What are the rules that define how the game works?

Describing the game elements
   What are the elements that define how the game looks?

Documenting the design
   Providing a blueprint for the game development process.
Sources of Game Ideas

Original ideas
   Classic imaginings of possible worlds

Other media
   Films, television, literature, music, etc.

Other games
   Improving on existing games, exploring new ideas…

The Real World
   Games inspired by the real world
Original Ideas

Katamari Damacy
Other Media

Toys/Games

Books/Comics

Films/Television
Other Games

The Sims 2: Christmas Party Pack

Playboy: The Mansion
The Real World
Core Elements of a Game Design

- Rules
- Gameplay
- Story
- Interaction
Rules define how game worlds work
  Rules define the “core mechanics” of the game
     Does the player have health points or multiple lives?
     What are the legal moves that a player can make?

Rules encode a designer’s vision
  Rules allow designers to express their ideas in ways that
  programmers can implement in software

Rules define the game not the software
  The same rules can be implemented in different ways: as long as
  the rules are the same the game is the same
All games involve some sort of story
   Even Tetris has a story, the story of the player playing

Some games have a simple back story
   “Aliens are invading Earth and only you can stop them.”

Some games are complex stories
   e.g. adventure games like Grim Fandango

Most games are somewhere in-between
   e.g. first-person shooters like Half-Life
Interaction

The experience of playing the game
Interaction design covers graphics, sounds, user interface
The sights and sounds of the game world
The look and feel of the control system

Bad user interfaces can kill a good game
e.g., overly elaborate menu driven systems

Good user interfaces make games stand out
Nintendo has a long tradition of fine-tuning and innovating with the user interfaces of their games
EVERYTHING ELSE IS CHILD’S PLAY.

The Power Glove. You plug it in like any joystick. But the similarity stops there. Because now you don’t just guide the action. You are the action.

3-D sensors track the position of your hand, giving you free-flowing instant response. It’s a complete connection. Intense. And powerful.

Plus, the Power Glove has a unique programmable keypad that gives you amazing new ways to play almost every Nintendo® game. All your joystick games become different. More exciting. And with games specifically designed for the Power Glove, you’ll be blown into another dimension.

So look for the Power Glove when it hits stores this Fall. Once you put it on, everything else becomes child’s play.
Challenges, Gameplay and Victory

Gameplay is a general term for the series of challenges that face a player as they play. Rules that the designer creates define these challenges.

Most games have a special kind of rule that defines the “victory condition.” The victory condition defines when a player has won the game, but not all games can be won.
The setting is the type of world that a game is set within, e.g., a football match.

- Setting is a significant part of the concept for a game.

The way that a player interacts with a game world (not the game machine) is called the interaction model.

- There are two dominant interaction models, using avatars as in first person shooters, and omnipresence as in strategy games.

Many games allow players to change their perspective, e.g., from one avatar to another.
The Player’s Role

Player’s usually take on some sort of role
e.g., a mercenary, a golfer, or a city planner

Defining a player’s role is a key element
If a player’s role is difficult to define then the game concept may require more work

Player’s can sometimes take on many roles
Some sports sims require switching between player/manager

Sometimes roles are defined within a game
Squad-based games allow players to take on different roles as situations arise
Realism vs Abstraction
Realism

Simulation games have to be realistic
Realism helps the player believe the simulation
Abstraction

Some games have little link to reality
Abstraction allows players to escape...

Space Giraffe

Jeff Minter
Realism vs Abstraction

Most games have to play a fine balancing act between realism and abstraction...
Graphics vs Story
Single Player vs Multiplayer
Balancing Gameplay

Gameplay should balance deterministic and non-deterministic elements.

- If the player doesn’t feel that they are capable of learning how to succeed in a game then they are unlikely to enjoy playing the game or spend much time on it.

The only method of balancing gameplay used in the games industry is play testing.

- Play testing is slow, expensive and error-prone but no other method has been found.
Games Within Games

Embedding sub-games
Sub-games provide different challenges in a game and provide a break from the main story

Accounting for meta-games
Meta-games are often unforeseen consequences of the game as it was designed
Game designers produce a series of design documents to tell others about their ideas. Game development teams consist of 20 to 50 people that all need to understand the game design.

Game design documents need to translate ideas into rules, stories, and interactions.

**Idea:** A team will defend their flag.

**Design:** As long as a team has its flag, at least 2 team members will remain within visual range of their base. If an enemy approaches within 20m of the base, the defenders will move between enemy and base and try to stop the attacker from advancing.
Design Documents

High Concept (2-4 pages)
A short document that expresses the fundamental ideas behind of a game to market it to others

Game Treatment (10-20 pages)
A broad outline of the game that goes into more detail about the basic ideas and aspects of the gameplay

Game Script (50-200 pages)
The game script is a detailed account of how the game will work, it covers creative, conceptual and functional aspects of the game as well as some technical aspects but only when necessary.
Contents of Design Documents

Basic Information
- The premise of the game
- The game’s intended audience
- The target game platforms
- The genre of the game
- The game’s unique selling points

Gameplay Elements
- Depending on the type of document it will contain more or less information on the story, rules, and interactions
Game Design Skills

Imagination
Game designs, like many other forms of designing, often begin an imagined world and game designers must have the ability to develop these worlds into a fully fledged design that can be developed
- Visual – characters, environments, objects
- Auditory – environments, voices, music
- Dramatic – characters, plots, emotions
- Conceptual – ideas, interactions, challenges

Lateral Thinking
Game designers will often have to find ways to solve problems that would impede the development process
Game Design Skills

Technical Awareness
A understanding of the technology is needed to work with programmers, engineers, etc.

Analytical Skills
Game design is an iterative process and game designers need good analytical skills including statistics

Aesthetic Abilities
Game designers together with the lead artist will set the visual tone of a game
Game Design Skills

General Knowledge
The best game designers are often specialists that have a broad range of interests and knowledge, including:

- Mathematics
- Logic
- History
- Literature
- Art
- Science
- Current affairs
Game Design Skills

Writing Skills
Writing plays an important part in game design and is used in different during the process:
- Technical writing for documenting the design
- Fiction writing for developing story and narrative
- Script writing for developing character dialogue

Drawing Skills
Game designers don’t need to be great artists but being able to sketch out ideas can sometimes be the best way to communicate them to other team members
Game Design Skills

Ability to Compromise

Game designers must be able to compromise on details while preserving a vision for the game as a whole.

Compromises may have to be made for a variety of reasons including:

- Marketing – to ensure the will game sell
- Production – to ensure the game will be made
- Technical – to ensure the game is feasible
- Artistic – to ensure the game is consistent
Game Development

Development time: 18-24 months
   It can take much longer, e.g. Peter Molyneux’s Fable.

Development team: 10-50 people
   Team sizes are increasing as they get more complex.
Grand merge of home gaming?

2010s

Cell phone games

DVD

Fiber to the home

GameCube

Interactive television?

ADSL/Cable

Xbox

MMORPGs

PlayStation 2

Internet gaming

Dreamcast

Nintendo 64

FPGA

PlayStation

“Multimedia machines”

SNES

CD-ROM

Genesis

CompuServe

Nintendo

VGA card

Atari 2600

Sound Blaster

Odyssey

IBM PC

Home game consoles

Commodore 64

Home

Arcade video games

Apple II

Bally

Personal computer games

Hand-helds

Online games

Atari

Gambling machines

CompuServe

Large LBE devices

1990s

FPGA

1980s

FPGA

1970s

Microprocessor invented, 1971

Mainframe computer games

BASIC programming language

1960s

First timesharing systems

2000s

3-D graphics hardware

Large LBE devices
The Games Industry
Game Developers

Producers
Designers
Programmers
Artists, modellers, animators
Musicians, sound engineers, actors
Game testers
Summary

Games are rule-based interactive play
   There are many different types of games, toys and puzzles

Game design involves...
   Imagining a possible game
   Defining the way it works
   Describing the game elements
   Documenting the design

Games designers need a wide range of skills
   Imagination, technical, artistic, and writing skills

Games are big business
   Games can cost millions of dollars to develop