The F word
Fun
EMOTIONAL OPTIMIZATION

Creativity
Experimentation
Balance
(A LOT of) fine-tuning
SO WHAT?

GAME OVER?
Game design is definitely an art rather than a science, and like most art-forms it requires inspiration, hard work and lots of experience to get it right (and even then you might not...).

However, you, as a game developer, have thousands of examples to follow and learn from in the shape of the games that others have made.
“Juicing is about taking a game that works and adding layers of satisfaction to improve game feel”

http://www.gameanalytics.com/blog/squeezing-more-juice-out-of-your-game-design.html
STEERING IN (A FEW OF) THE RIGHT DIRECTION(S)

- Animation
- Visuals
- Mechanics & Levels
- Process & Development Tips
- UX techniques you can use
“Inbetweening or tweening, is the process of interpolating values between two extreme values using the computer.”

Linear interpolations feel artificial
12 PRINCIPLES OF ANIMATION

Squash and Stretch
Anticipation
Staging
Pose to Pose
Follow Through
Slow in and Slow out
Arcs
Secondary Action
Timing
Exaggeration
Solid Drawing
Appeal

The Illusion of Life. Thomas and Johnston
EASINGS FUNCTIONS

http://easings.net/

http://1ucasvb.tumblr.com/post/44666043888/easing-functions-are-an-immensely-useful-tool-for
Animated effect on collisions between two sprites:

**Dust when a character lands or runs.** This is an efficient way to make your character feel like it belongs a bit more in his world and give his steps some impact.

**Sparkles, or stars.** This one is a cheap trick that once again gives a sense of impact whenever two objects are colliding.

**Pausing the game for a split second** is also a very efficient way to reinforce a collision.

**Trails** are useful whenever we want to put an emphasis on an object’s arc of movement.

http://www.gameanalytics.com/blog/squeezing-more-juice-out-of-your-game-design.html
Dust
Sparkles
Pausing
Trails
...

https://www.youtube.com/watch?v=YBKGDNzsFTQ
PROCEDURAL MOVEMENTS

Sine or cosine: make wonders happen!

If you animate the rotation of plants using a periodic function, you will make them feel like they are being pushed by wind.

A little tip: to create a believable wind effect, layer multiple sinuses of varying amplitudes and phase!

Animate the scale and opacity of a transparent circular sprite to add warmth to a bonfire or a lamp!

Animate the scale of a circle in a bouncy way and make it move in a loop to get a believable fly!

http://www.gameanalytics.com/blog/squeezing-more-juice-out-of-your-game-design.html

“Body movement is all sine functions”

https://mrl.nyu.edu/~perlin/
Ken Perlin
Professor of Computer Science
NYU Media Research Lab
Director, Games for Learning Institute
Member of MAGNET
719 Bwy, Rm 1202,
NY, NY 10003

email: my last name at mrl dot nyu dot edu
start-ups: tactonic hologam
blog: blog.kenperlin.com
vita.bio,courses,alligators

"Que não seja Imortal, posto que é Chama. Mas que seja Infinito enquanto dure..."

SOME TOYS FROM THE BLOG:
NOT JUST PLEASE, BUT FACILITATE
DOLLY ZOOM: MOVE IN, ZOOM OUT || MOVE OUT, ZOOM IN
MAKE IT POSSIBLE TO CHANGE ANIMATION STATES ANYTIME, ANYWHERE

“Any animation should be able to start from any other animation, at any time” The player wants to run, jump, grab onto a ladder in mid-air, climb up, shoot his gun, and jump off the ladder. The animations should allow him to do that.

“Do not disable input while an animation is playing, causing the player to wait for the animation to end before he can move again.” The player should never have to wait for his character’s animation to end before he is able to move again.

http://devmag.org.za/2011/01/18/11-tips-for-making-a-fun-platformer/
YOUR GAME’S JUICE SHOULD ALWAYS ECHO YOUR CORE GAMEPLAY.

You want your animations to be subtle to convey a sense of mystery. You cannot always use that funny elastic equation for instance. Both the amplitude and the rhythm of your tweens will hugely vary depending on your project’s requirements.
COLORS

Symbolism

Mood

Redirect attention
HIGHLIGHT FOCUS OF ATTENTION

Colors are used to indicate a clear path to follow.

Witcher 3

Mirror’s Edge

http://www.gameanalytics.com/blog/3-steps-to-improve-your-games-graphics.html
A BIT ON COLOR CONTRAST

• Discern objects (foreground) from background
• Luminance perception is not absolute, but contrast relative … and local!
COLOR SCALES

- If using 3D, don’t use grey color scales!
  - It interferes with shape and depth detection;
  - Use a color scale with uniform luminance, if possible
- If you need to use color to distinguish between similar objects, use Hue
  - Again, constant luminance if possible
- We can name, and easily perceive 5-10 cores; 12 max. More than that, don’t use colors

http://colorbrewer2.org/

http://www.workwithcolor.com/color-luminance-2233.htm
LUMINANCE

http://matplotlib.org/users/colormaps.html
COLOR SYSTEMS

**RGB** – Red Green Blue

**HSL** – Hue Saturation Lightness
PROCEDURAL PALETTES

Tiny Wings

PROCEDURAL PALETTES

1. Choosing random colours from a handpicked pre-set
2. Uniform Random RGB: ugly colors
3. Random Offset: a little contrast
4. Selecting from a gradient: controlled variations
5. Selecting random channels in other colour spaces e.g. HSL
6. Standard Colour Harmonies “aesthetically pleasing”
7. Triad Mixing mixes 3 colors randomly + controlled greyness

B&W CONTRAST

Suspicion (1941)

https://www.youtube.com/watch?v=j43DaFDhggM

Limbo

https://www.youtube.com/watch?v=Y4HSyVXKYz8
BACKGROUND VS. INTERACTIVE OBJECTS

Give a clear indication that interactive elements are interactive

Interactive objects should be rendered differently from background items.

Provide consistency.

No arbitrarily non-interactive objects; either you can interact with all doors or none of them. Ensure that you have more doors that can be opened than cannot. Do not block the player with short fences or other obstacles that should be trivial to bypass.

Use an easily readable default font size

Use simple clear text formatting

Provide high contrast between text and background
  • Double outlines can be helpful

http://gameaccessibilityguidelines.com
SUPERPOSITION - PARALLEL NARRATIVES

Translucent ceiling

Double-exposure
Parallel narratives
Music is mysterious and magical, it can alter our mood, cheer us up or even make us feel nostalgic.

To immerse the player it is important to add sound loops corresponding to your environments’ ambiance. Even if you have music playing on top of it!

Get the feedback SFX right. Even if that means no music.

http://www.gameanalytics.com/blog/squeezing-more-juice-out-of-your-game-design.html
TIPS FOR GAME DESIGN SOUNDF

Involve audio early in your project.

Audiovisual synchronisation is sometimes overlooked.

The perceived width of a sound diminishes as the source gets further away. Adding a rolloff to the spread parameter in Unity’s 3D sound settings can imitate this with stereo audio.

http://www.develop-online.net/analysis/11-top-game-sound-design-tips/0209363
MECHANICS & LEVELS
The topic of Laralyn McWilliams’ talk sounds difficult, but the concept is pretty straightforward: design your game’s system around players’ emotional needs. Many of us think of our game’s system as mostly including the reward mechanics. The player presses this button, and this happens. They kill this boss and are rewarded with this weapon, etc. However, McWilliams argues that player’s emotional needs can be viewed as a game system in itself. In fact, she argues, it is the most important one. That’s because in the end, a game’s success depends on satisfying a player’s needs.

1. Stress Emotional Connections at a Systemic Level

McWilliams explained how she begins her design process by listing all of her players’ emotional needs such as:

attachment to another person

to feel a sense of progress

to feel they have control,

a need to be social, etc.

Next, she tries to design the player’s interaction around these needs. For example, in Full Spectrum Warrior, she explained that having a need to progress was usually accomplished through playing through levels. However, the need to feel attachment to others involved connecting players with the NPC’s. For this she included elements like combat chatter where team members called to each other by name. This create a deeper emotional connection with the player.
The only four core mechanics in games

- Solving problems perceived as NP-hard using heuristics
- Understanding other people & social relationships
- Mastering your physical reactions
- Exploiting the brain software bug around probability estimation

I ended up concluding that there are only four kinds of problems sitting at the center of game atoms.

Raph Koster. A Theory of Fun for Game Design.
KNOW YOUR PLAYERS

GAMER MOTIVATION MODEL

<table>
<thead>
<tr>
<th>Action</th>
<th>Social</th>
<th>Mastery</th>
<th>Achievement</th>
<th>Immersion</th>
<th>Creativity</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Boom!”</td>
<td>“Let’s Play Together”</td>
<td>“Let Me Think”</td>
<td>“I Want More”</td>
<td>“Once Upon a Time”</td>
<td>“What If?”</td>
</tr>
<tr>
<td>Destruction</td>
<td>Competition</td>
<td>Challenge</td>
<td>Completion</td>
<td>Fantasy</td>
<td>Design</td>
</tr>
<tr>
<td>Excitement</td>
<td>Community</td>
<td>Strategy</td>
<td>Power</td>
<td>Story</td>
<td>Discovery</td>
</tr>
</tbody>
</table>

We validated and refined our motivations model based on data from 30,000 gamers around the world.

Get your gamer profile at: https://apps.quanticfoundry.com/lab/gamerprofile/

http://quanticfoundry.com/2015/12/15/handy-reference/
<table>
<thead>
<tr>
<th>KNOW YOUR PLAYERS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Immersion</strong></td>
</tr>
<tr>
<td><strong>High:</strong> interesting narratives, settings, and customization options.</td>
</tr>
<tr>
<td><strong>Low:</strong> grounded in gameplay mechanics</td>
</tr>
<tr>
<td><strong>Fantasy, Story</strong></td>
</tr>
<tr>
<td><strong>Social</strong></td>
</tr>
<tr>
<td><strong>High:</strong> enjoy interacting with other players, either coop or collab.</td>
</tr>
<tr>
<td><strong>Low:</strong> prefer solo experiences, independence</td>
</tr>
<tr>
<td><strong>Competition, Community</strong></td>
</tr>
</tbody>
</table>

http://quanticfoundry.com/2015/07/20/how-we-developed-the-gamer-motivation-profile-v2/
WHERE TO GET INSPIRATION
KNOW YOUR PLAYERS

MAP OF GAMING MOTIVATIONS

The 3 High-Level Clusters
1. Action-Social
2. Mastery-Achievement
3. Immersion-Creativity

Bridges
- Discovery is a bridge between Immersion-Creativity and Mastery-Achievement.
- Power is a bridge between Action-Social and Mastery-Achievement.

"Gaming Motivations Group Into 3 High-Level Clusters"

http://quanticfoundry.com/2015/12/21/map-of-gaming-motivations/
ON BALANCE + KNOW YOUR PLAYERS

Even if you have a pretty good idea of how to modify the difficulty of your game and where your target audience falls, what do you choose as your challenge level when the audience is diverse? No matter what you do, your game will be too hard for some people and too easy for others, so this appears to be a no-win situation.

If you must choose a single level of challenge, a rule of thumb is to aim for the middle of the curve, as you will get the most people (the widest possible audience) that way.

Another way around this is to provide support for those at the ends of the curve, using multiple difficulty levels, handicaps, or alternate rule sets to make things easier or harder.

MAKE IT EASY TO JUMP OVER GAPS

“The player can jump when he is in the green area. The larger green area on the right makes it easier to jump across platforms (that’s a good thing)”

http://devmag.org.za/2011/01/18/11-tips-for-making-a-fun-platformer/
Make interactive elements that require accuracy (e.g. cursor/touch controlled menu options) stationary.
DIFFERENT WAYS TO ACHIEVE A GOAL

**Multiple ways to win a game.**
Mechanics allow for a variety of strategies to emerge during game-play
Good motivation for strategy exploration.
Except maybe puzzles.... Maybe.
“I can win using this combination, but can I win using another different combination?”

**Give players a sense of control and choice.**
Relate more to the game
Possibly feel more immersed.
“They could reach the end of the level using different paths, using a secret door, or “teleport”

http://learntocreategames.com/5-simple-tips-to-improve-gameplay/
ALLOW THE PLAYER CHARACTER TO GROW AND CHANGE

This means that the player may acquire new weapons, skills, or assets. The idea is that the player character will evolve over time; so in the case of a FPS, you could include different weapons to the level, add power-ups, etc.

http://learntocreategames.com/5-simple-tips-to-improve-gameplay/
PROVIDE PLENTY OF POWER-UPS AND COLLECTABLES

“Most kids collect stuff, purely because it is fun.

That same feeling of joy happens when you collect things in a computer game. Put collectable stuff in the game. The more, the better.

There is no logical reason for it. It is just fun.”

http://devmag.org.za/2011/01/18/11-tips-for-making-a-fun-platformer/
REWARDS AND PUNISHMENT

Use rewards and punishment. By making failing suck, you make winning feel even better.

But don’t make the punishments too harsh.

“be careful with [punishments]; today’s gamers aren’t as patient as they were 25 years ago”

Even simple short cinematic scenes that demonstrate the glory or shame of success or failure can be enough.

Failure should never be cheap or free. There must always be a cost associated with it. While this cost may not seem like much and a player will repeatedly pay that cost to learn. Pricing failure encourages players to try out different strategies (combination of ability/skills) in attempt to avoid the price of failing.
REWARDS

Often good to **reward the player** when they have achieved a **significant milestone** (e.g., bonus at the end of the level);

**But you can go a step further by rewarding them for taking risks.**

So, if your game makes it possible to reach a goal in different ways (easy and difficult), make sure that the latter provides more rewards.

http://learntocreategames.com/5-simple-tips-to-improve-gameplay/
Players play your game for different reasons; it could be for exploration, escapism, competition, or just to challenge themselves. So what is perceived as a reward may take different forms, based on the player’s preferences.

So you may provide a wide range of rewards in your game including:

- score increase,
- extra lives,
- extra-powers,
- a spot in the high-score list,
- beautiful rooms (for those who are more visual),
- new sounds or sound effects, etc.

http://learntocreategames.com/5-simple-tips-to-improve-gameplay/
AN INTERESTING AWARDS SYSTEM
Goals:

**Goal +100** - Score a goal.
**Backwards Goal +20** - Score a goal with the final hit coming off the rear of your vehicle.
**Aerial Goal +20** - Score a goal directly off of an aerial hit.
**Bicycle Goal +20** - Score a goal directly off of a bicycle hit.
**Long Goal +20** - Score a goal from a long distance, about the far third of the arena from the goal.
**Overtime Goal +50** - Score the overtime winning goal.

Awards:

**Hat Trick +50** - Score 3 goals in one match.
**Saviour +50** - Save the ball 3 times in one match.
**Playmaker +50** - Get 3 assists in one match.
**Exterminator +10** - Demolish any players 7 times in one match.
**Juggle +10** - Knock the ball up multiple times in a row without it touching anything else.

End Game XP Bonuses:

**Completed Match +750** Finish a game on the losing team.
**Win +1000** - Finish a game on the winning team.
**MVP +100** - Be the player with the most points on the winning team at the end of the match (Most Valuable Player).

Hits:

**Demolition +0** - Destroy an opposing team-member by ramming into them at top speed.
**First Touch +10** - Be the first person to touch the ball at a kick-off.
**Aerial Hit +10** - Hit the ball while it is higher than about the crossbars of the goals.
**Bicycle Hit +10** - Hit the ball with the hood/roof of your car while performing a backflip.
**Centre Ball +20** - Knock the ball into the opposing team's goal area.
**Clear Ball +20** - Knock the ball out of your own team's goal area.
**Pool Shot +20** - Cause another player to score a goal for your team by knocking or ramming them into the ball.
**Shot on Goal +30** - Take a shot at the goal.
**Save +50** - Block a shot on goal from the opposing team.
**Assist +50** - Be the last player from your team to touch the ball before a team-mate takes a goal scoring shot.
**Epic Save +60** - Block a shot on goal that had a 100% chance of being a goal without your hit or where the ball was already touching the goal line.
LET ENEMIES WEAKEN.

“In gaming, a baddy who has 95% health is identical to a baddy who has 3% health. And that’s crazy!”

(…) if you reduce [humans] down to three percent of their total health, they can barely even pick up a gun, let alone successfully aim it. (…) So how about there’s some level of deterioration when we attack? (…) maybe they move more slowly, aim less reliably? That sort of thing.

Do write maybe five more barks for your NPCs.

“When non-player characters shout the same three lines over and over and over and over and over and over and over in your game, the only impression I can get is that you never played it before release.”


http://kotaku.com/5921878/why-video-game-characters-say-such-ridiculous-things
TIPS TO DESIGN PUZZLES: STARTING

Start with a puzzle mechanic you want to focus on

Do it on (gridded) paper

Design a lot of puzzles and don’t be afraid to change them or throw them away.

“Of the first several puzzles that I designed for Cogs, almost none of them made it into the final product”

Think of the overall concepts you want the puzzle to involve or the actions you want the player performing
TIPS TO DESIGN PUZZLES: MAKING

Make the goal visible from the start of the level.

The wrong way should communicate clearly that it is WRONG. The opposite of that is that the right way should communicate clearly that it is RIGHT.

Arrange the levels so they don’t just get harder and more complicated.

If you presented another level that looked harder directly after the player had completed a difficult level, he or she would just lose interest in continuing. If you gave the player a level that made them think, “Oh, this looks easy”, they’d be more likely to play. Once they got their confidence back up, you could confront them with a really hard level.”
TIPS TO DESIGN PUZZLES: POLISHING

Test early and often.

“Try out your designs on your friends. You may find it frustrating, but you should sit completely silently and watch them play. Don’t offer any hints.”

Hints extend interest, when players are about to give up

Positive reinforcement (a carrot) is better than negative reinforcement (a stick).

Don’t forget that your puzzles are harder than you think, because you’ve been staring at them for so long. Puzzles take MUCH longer to design and test than you think they will.
TIPS TO DESIGN PUZZLES

http://devmag.org.za/2011/05/02/how-are-puzzle-games-designed-guy-lima/
https://gamedevelopment.tutsplus.com/tutorials/portal-2-level-design-creating-puzzles-to-challenge-your-players--gamedev-4828
http://www.slideshare.net/pierluca.lanzi/designing-puzzles-for-video-games
http://ask.metafilter.com/274334/Tips-on-level-design-for-grid-based-movement-puzzles
https://www.reddit.com/r/gamedev/comments/1twvri/what_are_your_tips_for_designing_puzzle_levels/
ADJUSTABLE GAME SPEED

Include an option to adjust the game speed
CUTSCENES

Let players move during cutscenes
Let players pause cutscenes
TEXT PROMPTS

Allow players to progress through text prompts at their own pace
Provide gameplay thumbnails with game saves
DO let me skip your game’s tutorial. Even if you’ve, because you’re THE WORST PERSON ON EARTH, made your tutorial levels part of the overall game.

The player needs to learn the what, the how and the why/when in order to be able to play your game. That means designing the tutorial in the order that someone would be playing the game. Offworld Trading Company had an excellent tutorial in this regard: Breaking it into multiple parts designed to walk a player through the order of playing a game.

Despite the simplicity of the tutorial, Dark Souls 3 is a recent example of how to break down the mechanics.

It starts with simply telling the player how to move around, then how to swing a weapon, then how to use an item, then backstabbing and other advanced moves, before wrapping up with a final section of fighting enemies and a boss. Speaking of that boss fight, that’s a good segue way into an understated element that tutorials should have.
TUTORIALS

Never assume that the player read your manual or played past games in the series when designing a tutorial...

http://game-wisdom.com/critical/important-tips-tutorial-game-design
“DON’T force me to set difficulty levels at the start of the game, and then refuse to allow me to change it. Difficulty levels are there to let me tweak the game to be the optimal playing experience. I’m not playing your game to take part in an international tournament — I’m entertaining myself.”
There are other ways to block a passage off than having the roof collapse. Make a distinction between locked doors that will eventually open and doors that can never be opened.
WHAT PLAYERS DO FOR REPLAYABILITY

CHALLENGES/MODALITIES YOU MIGHT CONSIDER INCORPORATING

1. No Minimap
2. Permadeath
3. Limited Weapons
4. Limited Healing
5. No Leveling Up
6. A Single Save File
7. Change The Language
8. Limit Your Travel Options
9. Really Role-Play

http://kotaku.com/10-ways-to-make-your-favorite-games-feel-new-again-1696774890
ENEMIES/AI
WRITE GENERIC, BUT VERSATILE AI

### Walking AI

<table>
<thead>
<tr>
<th>Variables</th>
<th>Health</th>
<th>Speed</th>
<th>Jump height</th>
<th>Attack style</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health</td>
<td>1 = Easy</td>
<td>0 = Static (remains in one spot, e.g. Venus's flytrap)</td>
<td>0 = Cannot jump</td>
<td>0 = None, just wander around</td>
</tr>
<tr>
<td>3 = Medium</td>
<td>1 = Slow</td>
<td>2 = Medium</td>
<td>1 = Low</td>
<td>1 = Near range melee</td>
</tr>
<tr>
<td>5 = Difficult</td>
<td>2 = Medium</td>
<td>3 = High</td>
<td>2 = Medium</td>
<td>2 = Medium range melee</td>
</tr>
<tr>
<td></td>
<td>3 = Fast</td>
<td></td>
<td>3 = High</td>
<td>3 = Shoot projectiles</td>
</tr>
<tr>
<td></td>
<td>5 = Super fast</td>
<td></td>
<td>10 = High when the player is directly above</td>
<td></td>
</tr>
<tr>
<td></td>
<td>10 = Slow, but fast when the player is nearby</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## WRITE GENERIC, BUT VERSATILE AI

### Variables

<table>
<thead>
<tr>
<th>Health</th>
<th>Speed</th>
<th>Fly diagonal</th>
<th>Attack style</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 = Easy</td>
<td>1 = Slow</td>
<td>0 = Cannot fly diagonally</td>
<td>0 = None, just wander around</td>
</tr>
<tr>
<td>3 = Medium</td>
<td>2 = Medium</td>
<td>1 = Can fly diagonally</td>
<td>1 = Near range melee</td>
</tr>
<tr>
<td>5 = Difficult</td>
<td>3 = Fast</td>
<td>10 = Slow, but fast when the player is nearby</td>
<td>2 = Medium range melee</td>
</tr>
<tr>
<td></td>
<td>5 = Super fast</td>
<td></td>
<td>3 = Shoot projectiles</td>
</tr>
</tbody>
</table>
**WRITE GENERIC, BUT VERSATILE AI**

Crawling AI

<table>
<thead>
<tr>
<th>Variables</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Health</strong></td>
</tr>
<tr>
<td>1 = Easy</td>
</tr>
<tr>
<td>3 = Medium</td>
</tr>
<tr>
<td>5 = Difficult</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>
INTERFACE DESIGN
There are various definitions of what a user interface is, but most of them include the following:

- Information that allows a user to make a decision.
- The user input system.
- The feedback generated by the user input. This leads back to the first point: information to make the next decision.

Examples of non-game user interfaces:

- The controls and dials of a car.
- The LED, buttons and beeps of a washing machine.
- The remote control of a television.
- The buttons and highlighted floor number of a lift.

What makes a good, non-game user interface?
Indicate / allow reminder of current objectives during gameplay

Indicate / allow reminder of controls during gameplay
Ensure no essential information (especially instructions) is conveyed by text alone, reinforce with visuals and/or speech
3. Use the “Magic Number”

Dan Teasdale of the Rock Band series discussed the design theory of the “magic number.” The number 3 is a popular number that can be seen in all types of game designs like the the number of starting lives, the number of Angry Birds stars, etc. “There’s clearly something to this number instead of random coincidence…It turns out it stems with how the human brain deals with information,” Teasdale explains.
FEEDBACK
GENRE-SPECIFIC
PLATFORMERS

- Allow the player to move in the air when jumping
- Make it easy to climb ladders
- Make it easy to climb vines on the side of a wall
- Make it easy to swing on ropes
- Let the player double jump whenever
- Avoid using inertia
- Make moving platforms friendly
- Avoid adding leaps of faith
- Remove frustrating elements

A cut scene which you cannot skip before the boss fight. When the boss kills you then you are forced to watch the cut scene again.
Extremely difficult jumps that you have to retry countless times to get right.
Spending large amounts of time collecting items to achieve a goal (for example, collect 100 stars to get a special weapon) then losing all the items when you die.
Complicated button combos which take too long to do a special attack and is interrupted when an enemy punches you.
Losing health when you fall from a high height.
Being attacked by enemies who are still off screen.
PROCESS & DEVELOPMENT TIPS
WHAT DO VARIOUS GAME DESIGN RECOMMENDATION LISTS HAVE IN COMMON?

1. Try things out!  
   “Don’t be afraid to make mistakes”  
   “Expand your horizons”  
   “Keep designing on paper”  
   “Prototype, Prototype, Prototype”  
   “Don’t be afraid of mistakes”

2. Listen to your user (or player) base  
   “Know your audience”  
   “Listen to feedback”  
   “Playtest early and often”  
   “Be open to feedback”  
   “Practice and Fall (small)”  
   “There is no golden rule….except for TEST YOUR GAME”

3. Test early, and often

Don’t Try and Evaluate Your Own Game
PROTOTYPE BEFORE FINALISING THEORETICAL FUN

http://devmag.org.za/2011/01/18/11-tips-for-making-a-fun-platformer/
USE PLACEHOLDER CODE

Use placeholder code wherever you can so that you can move onto core gameplay earlier.

Once you have that nailed, you can systematically replace placeholder code with code that does a better job.

What is nice about this approach is that once you have all the systems in and working with your core gameplay, it is much easier to prioritize tasks according to their gameplay impact.

http://devmag.org.za/2014/01/08/rapid-game-prototyping-tips-for-programmers/
INCREMENTAL DESIGN/DEVELOPMENT

Focus on small manageable pieces that you can make.

Make the platformer, then add the speed boost, then the attack.

Build the game up in stages.

http://devmag.org.za/2012/02/13/game-design-on-ideas/
STATS

Store it! It’s cheap!
Can be used a posteriori for gameplay analysis

“Players love stats”

In-game feedback:
  - Awareness on Performance
  - Single-Player, but particularly for Competitive Multi-Player
  - Awards!

https://badgeville.com/wiki/Game_Design
STATS — WHAT TO CAPTURE?

- Time
WHAT NOT TO DO

Do not skip the prototype phase of development.
Do not underestimate the power of good planning.
Do not play test only by the end of the project and/or only with friends.

http://indiegames.com/2013/11/opinion_what_not_to_do_when_st.html
UX TECHNIQUES YOU CAN USE
“NO ONE WANTS TO PLAY GAMES THAT ARE FRUSTRATING OR DIFFICULT FOR THE WRONG REASONS.”
USABILITY HEURISTICS

1. Provide consistent responses to the user’s actions.
2. Allow users to customize video and audio settings, difficulty and game speed.
3. Provide predictable and reasonable behavior for computer controlled units.
4. Provide unobstructed views that are appropriate for the user’s current actions.
5. Allow users to skip non-playable and frequently repeated content.
6. Provide intuitive and customizable input mappings.
7. Provide controls that are easy to manage, and that have an appropriate level of sensitivity and responsiveness.
8. Provide users with information on game status.
9. Provide instructions, training, and help.
10. Provide visual representations that are easy to interpret and that minimize the need for micromanagement.

DON'T TRY AND EVALUATE YOUR OWN GAME

“When you’re designing a game you have all of this knowledge in your head about how the game works. But there’s a problem with that because it’s actually impossible to for you to strip that knowledge back out of your head.

Our perspectives as designers is wholly tainted with this dark knowledge about how the game works.

This is a problem because players who don’t have that knowledge still need to be able to play your game, and they need to be able to do it without you explaining it to them.”
PLAYTESTING RIGHT

“I’ve found it very helpful to just shut up when someone is playtesting my game”

“It’s often excruciatingly painful to watch as someone just completely fails over and over again in the exact same way (you’d think after failing, people would try a different approach, but they often don’t).”

“Once you open your mouth you’ve biased your study. Even asking, “Why’d you do that just now” leads the player to reflect on their actions in a way they normally wouldn’t. So just watch and note down every moment that you cringe as a problem for which you need to design a solution.”

http://devmag.org.za/2011/05/02/how-are-puzzle-games-designed-guy-lima/
REACTION CARDS

Gauge user responses to aesthetic qualities of your game

At the end of usability testing sessions, give participants a deck of cards and ask to select 5 words that best describe the product/system

Original deck had 118 cards; reduced versions for easier application of the method;
  * Example on right, but another collection might be more suitable for games

Metrics:
  * % users who selected each individual word
  * Rank words by frequency
  * If comparing different versions of a product, use a Venn Diagram

https://www.nngroup.com/articles/microsoft-desirability-toolkit/
Original deck list: https://www.nngroup.com/articles/desirability-reaction-words/
SELECTED WORDS (FROM ORIGINAL DECK: 118 CARDS)

Complex  Difficult  Annoying  Appealing  Approachable  Attractive  Boring  Busy  Clean  Clear  Calm  Comfortable  Compatible  Compelling
Confusing  Controllable  Creative  Distracting  Easy  Empowering  Energetic  Engaging  Entertaining  Exciting  Expected  Familiar  Fast  Flexible
Fresh  Friendly  Frustrating  Fun  High quality  Incomprehensible  Inconsistent  Innovative  Inspiring  Intimidating  Intuitive  Inviting  Irrelevant  Meaningful  Motivating  Novel  Old  Ordinary  Organized  Overwhelming  Poor quality  Powerful  Predictable  Rigid  Satisfying  Secure  Simplistic  Slow  Sophisticated  Stimulating  Straight Forward  Stressful  Unapproachable  Unattractive  Uncontrollable  Unconventional  Understandable  Unpredictable  Unrefined
A/B TESTS

Controller configurations, rewards, leveling, pop-up & alerts...

http://www.gdcvault.com/play/1020201/A-B-Testing-for-Game
MAIN TAKEAWAYS
MAIN TAKEAWAYS

Seek & value feedback
Know your players
Extra care in “juicing”
Prototype fun early on
Make time to calibrate/fine-tune
Puzzle design takes time, start early
YOU GOT THIS
CHECK THESE LATER

http://pt.slideshare.net/yerushalmi99/game-design-engagement
http://www.gameanalytics.com/blog/how-to-analyze-games.html

http://www.videogamedesignschools.net/40-helpful-independent-game-design-forums/
https://www.facebook.com/Game-Juice-615817268526338/
http://www.pixelprospector.com/the-big-list-of-game-design/
Mood
You should always **focus on your game’s emotional essence** first and foremost, what emotion are you trying to convey to your player.

”You may not realise it, but the most successful games are those that have a great *atmosphere.*” For some games, it’s the music that brings most of the atmospheric edge. For others, it’s the graphics. For still others, it’s a sense of progression within the gameplay.

My point here is that atmosphere is seldom generated by a single aspect of your game. It’s not the graphics, it’s not the sound design, and it’s not the story... It’s all of these things taken as a whole and it’s how they work together. So, atmosphere is important, but how do you create this in your own games? Easy... **attention to detail!** That’s it. Pay attention to the little details in your game, those things that the player may not even consciously notice, but that when they do they go “cool!”
I insist: the concept of juice is meant to **reinforce your existing gameplay**. Juicing up shooting games has already been thoroughly documented by Vlambeer in the talk I linked to above. In such a game, juicing is pretty straightforward: it boils down to making the player feel powerful. You can do so by increasing the size of your bullets, make them move faster, add some recoil when shooting, etc.