PSYCHOLOGY OF GAME DESIGN FOR LEARNING
OUR CHALLENGE:
THE MOST BORING TOPIC I COULD FIND:

HSA Procedures

OR one of your own topics
“One of the subtlest releases of chemicals is at that moment of triumph when we learn something or master a task...

...In other words, with games learning is the drug.”

Raph Koster – A Theory of Fun
PSYCHOLOGICAL PRINCIPLES

- Attention
- Flow
- Structure
- Feedback Types
FIRST, LET’S START WITH ATTENTION

- How long is your attention span?
Let’s talk about attention...

Rider: The conscious, verbal, thinking brain

Elephant: The automatic, emotional, visceral brain

Jonathan Haidt, The Happiness Hypothesis
THE RIDER

I should order a salad.

I really should get this homework out of the way.

Exercising now will give me more energy later.
THE ELEPHANT

Mmmm, French fries!

Hey, look! Celebrity Chef Death Match is on!

I'm just going to lie down on the couch for ONE minute...
SO, WHEN THERE’S A CONFLICT...

Who do you think wins?
We are creatures of urgency:

Basically, the elephant is bad at waiting for stuff.

Maybe I should consider retirement planning...
WE HAVE TROUBLE WITH THIS...

We are also *loss averse*...

<table>
<thead>
<tr>
<th>Activity</th>
<th>Immediate consequence</th>
<th>Delayed consequence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smoking</td>
<td>Nice nicotine hit</td>
<td>Lung cancer</td>
</tr>
<tr>
<td>Saving for retirement</td>
<td>Less money</td>
<td>More money</td>
</tr>
<tr>
<td>Exercise</td>
<td>Ouch</td>
<td>Nice abs!</td>
</tr>
<tr>
<td>Doughnuts</td>
<td>Mmm...</td>
<td>I’m not getting on that scale...</td>
</tr>
</tbody>
</table>
WHICH DO YOU THINK WORKS BETTER:

I guess I’ll be glad I know this someday...

I’m really glad I know this now...
AND THE FUTURE IS SOOOOO FAR AWAY...
WE MAKE DECISIONS DIFFERENTLY FOR OUR FUTURE SELVES

Current self

Future self

Pronin et al 2008
IT’S ABOUT CAKE VS FRUIT SALAD

Shiv and Fedorikhin 1999
Heart and Mind in Conflict: The Interplay of Affect and Cognition in Consumer Decision Making
SO, IF OUR LEARNERS ARE FORCING THEMSELVES TO PAY ATTENTION...

...WE’D BE LUCKY TO GET 7-10 MINUTES.

HSA Procedures
POP QUIZ

How you do you say:

“Mihaly Csikszentmihalyi”

cheat code
WHAT’S FLOW?

Flow: The Psychology of Optimal Experience

By
Mihaly Csikszentmihalyi
THE FLOW CHANNEL

- Flow: The Psychology of Optimal Experience by Mihaly Csikszentmihalyi
WHAT’S HAPPENING IN THE BRAIN?
WHAT IS GOING ON WHEN YOU ARE LEARNING SOMETHING NEW?

Well, areas like your frontal cortex gets busy. It starts burning a lot of fuel, and hits its limits pretty quickly.
WHAT IS GOING ON WHEN YOU USING A REGULAR PATTERN YOU ALREADY KNOW?

That leverages parts of the brain functions that can run without a lot of conscious attention.
Fig. 6. PET images (41% atlas slice) of a subject in naive and practiced conditions, showing decreases in GMR. Glucose Metabolic Rate after several weeks of Tetris Practice
MOST CLASSES ARE BIKING STRAIGHT UPHILL

New
New
New
New
New
New

Whew!
GAMES, ON THE OTHER HAND...

Level 1: Some new stuff, pretty easy though
Level 2: Stuff you know plus a bit more
Level 3: Stuff you know, maybe a little faster
Level 4: Stuff you know plus a bit more
Level 5: Stuff you know, kicked up a notch
Level 6: Boss Fight
IT ALSO ALLOWS YOU TO PAY ATTENTION TO WHAT’S DIFFERENT.

In this model, everything is new and everything is important (so nothing is).
IT ALSO ALLOWS YOU TO PAY ATTENTION TO WHAT’S DIFFERENT.

In this model, the new material is mixed in with existing stuff, so the new material stands out.
NEXT, LET’S TALK ABOUT GOALS

Image Credit – Sebastian Deterding
http://www.slideshare.net/dings/dont-play-games-with-me-promises-and-pitfalls-of-gameful-design
ANYBODY EVERY PLAYED DINER DASH?
FLO'S CAREER

Select a level and click "NEW GAME" to start that level - or - click "CONTINUE" to resume saved game.

CONTINUE

A star shows a level where you got an expert score.
EVER BEEN ROCK CLIMBING?
MICRO-LEVEL GOALS
MEDIUM GOALS

Image Credit – Sebastian Deterding
http://www.slideshare.net/dings/dont-play-games-with-me-promises-and-pitfalls-of-gameful-design
END GOAL!
5.0 to 5.4 There are two hand- and two footholds for every move; the holds become progressively smaller as the number increases.
5.5 to 5.6 The two hand- and two footholds are there, obvious to the experienced, but not necessarily so to the beginner.
5.7 The move is missing one hand- or foothold.
5.8 The move is missing two holds of the four, or missing only one but is very strenuous.
5.9 The move has only one reasonable hold which may be for either a foot or a hand.
5.10 No hand- or footholds. The choices are to pretend a hold is there, pray a lot, or go home.
5.11 After thorough inspection you conclude this move is obviously impossible; however, occasionally someone actually accomplishes it. Since there is nothing for a handhold, grab it with both hands.
5.12 The surface is as smooth as glass and vertical. No one has really ever made this move, although a few claim they have.
5.13 This is identical to 5.12 except it is located under overhanging rock."
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EVEN IF YOU DON’T NOTICE IT...
HOW ABOUT MONOPOLY?
KEEP IT BALANCED
PLANTS VS ZOMBIES LEVEL DIFFICULTY

Level Results (Adventure)
Instead of WIIFM, How about WCIDWT?
Photoshop for Beginners - Lesson Outline

Class A
Lesson 1: Working with layers
Lesson 2: Photo-editing tools
Lesson 3: Working with filters and effects
Lesson 4: Using the Pen tool

Class B
Lesson 1: How to create a swanky blog header
Lesson 2: How to make a so-so photo look amazing
Lesson 3: How to create an album cover
Lesson 4: How to remove your ex from your sister’s wedding pictures
A goal needs to be an accomplishment

I crushed the quarterly sales goal!

You completed Module 4!
What does the feedback loop look like?
LET’S TALK ABOUT VISCERAL FEEDBACK

“Incorrect, a better choice would be to establish a perimeter before proceeding into the secure area.”

“BLAM!”

“You just triggered a secondary device, killing yourself and several bystanders...”

This is opinion...

...while this is data.
SO LET’S TRY ONE

Restaurant Management
NOW, LET’S TACKLE OUR HSA EXAMPLE

HSA Procedures

OR one of your own topics
QUESTION? COMMENTS? VIOLENT DISAGREEMENT?

- Thanks!
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- References here: