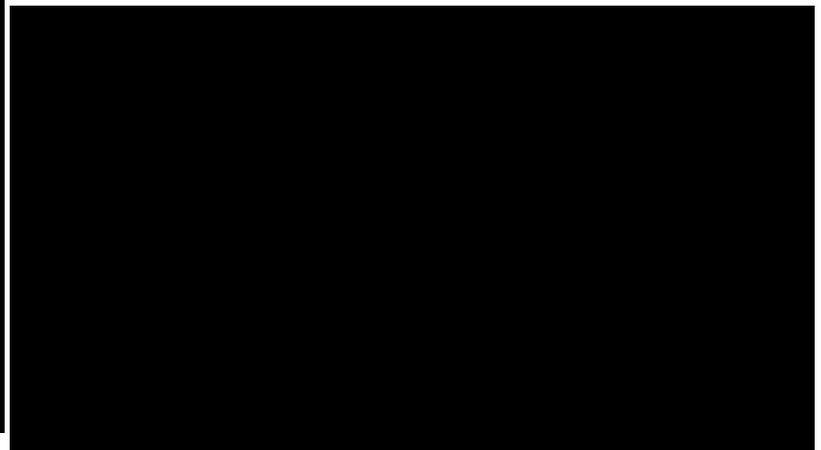


Walking Backwards in to the Future

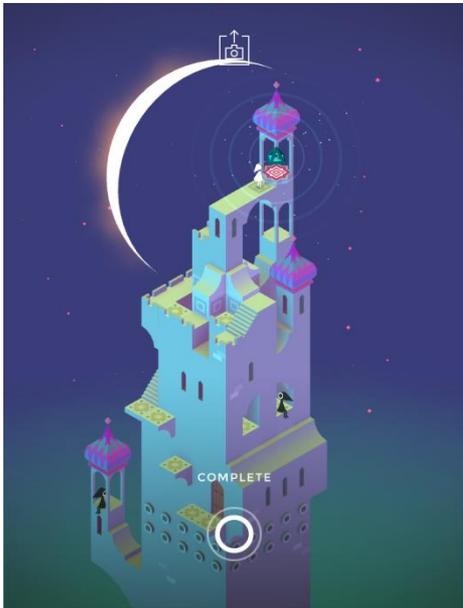
*Ensuring the
Success of
Games for Learning*



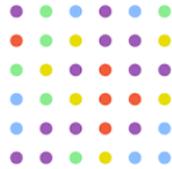
<https://www.youtube.com/watch?v=X6jprOZ29wY>

<https://www.youtube.com/watch?v=X6jprOZ29wY>

Katrin Becker



Year 58 Year 2



4 2 0



What am I playing Now?



"Most of us prefer to walk backward into the future, a posture that may be uncomfortable but which at least allows us to keep on looking at familiar things as long as we can."

~ Charles Handy

..
B\$Zl'
>GRHF'
vB\$Bv
'i'
>'
^:U:
-z=O-
^X="=H.
XR:r'i
iVlH\$'
.niB\$Bp
'B\$B-c'
'v\$u\$
'-H\$B\$=
'..iF\$O'
'p\$zOAp
=H\$zIH\$
U^p=U
:F\$'
'p\$S\$'
'>=R'
'X\$'
'..>=



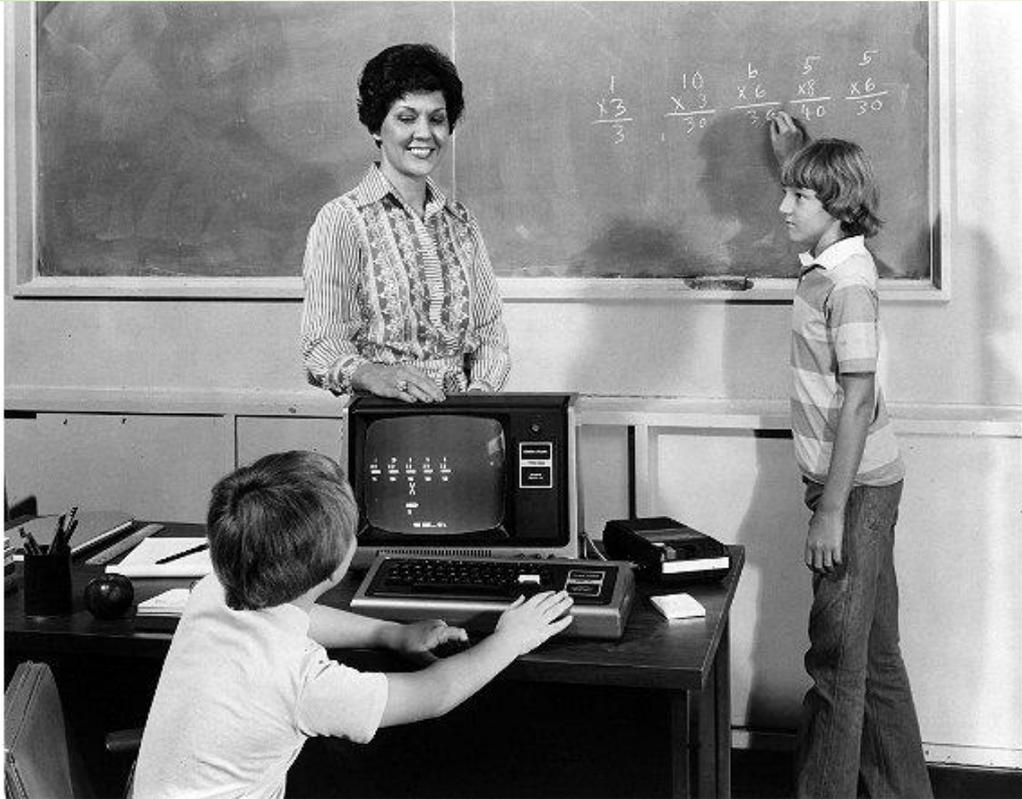
Formal education moves at
geological speeds,
and that's lucky for us....



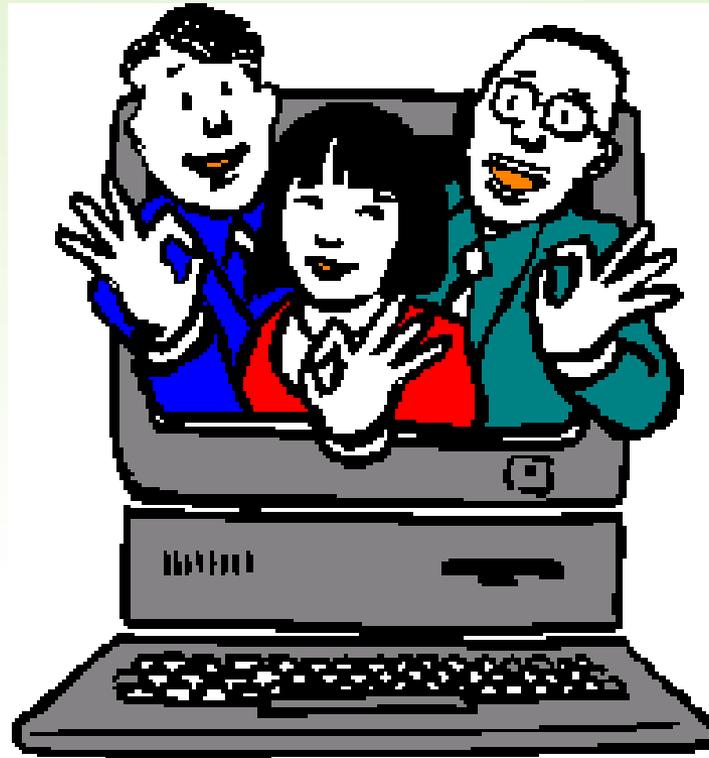
because games for learning
really aren't ready for prime time,
and it's not for the first time.



During the
'Edutainment Era'
of the 1980s and
1990s computer
games were
proclaimed as the
modern solution
to all our
educational ills.



In order to take advantage of this great technology.....



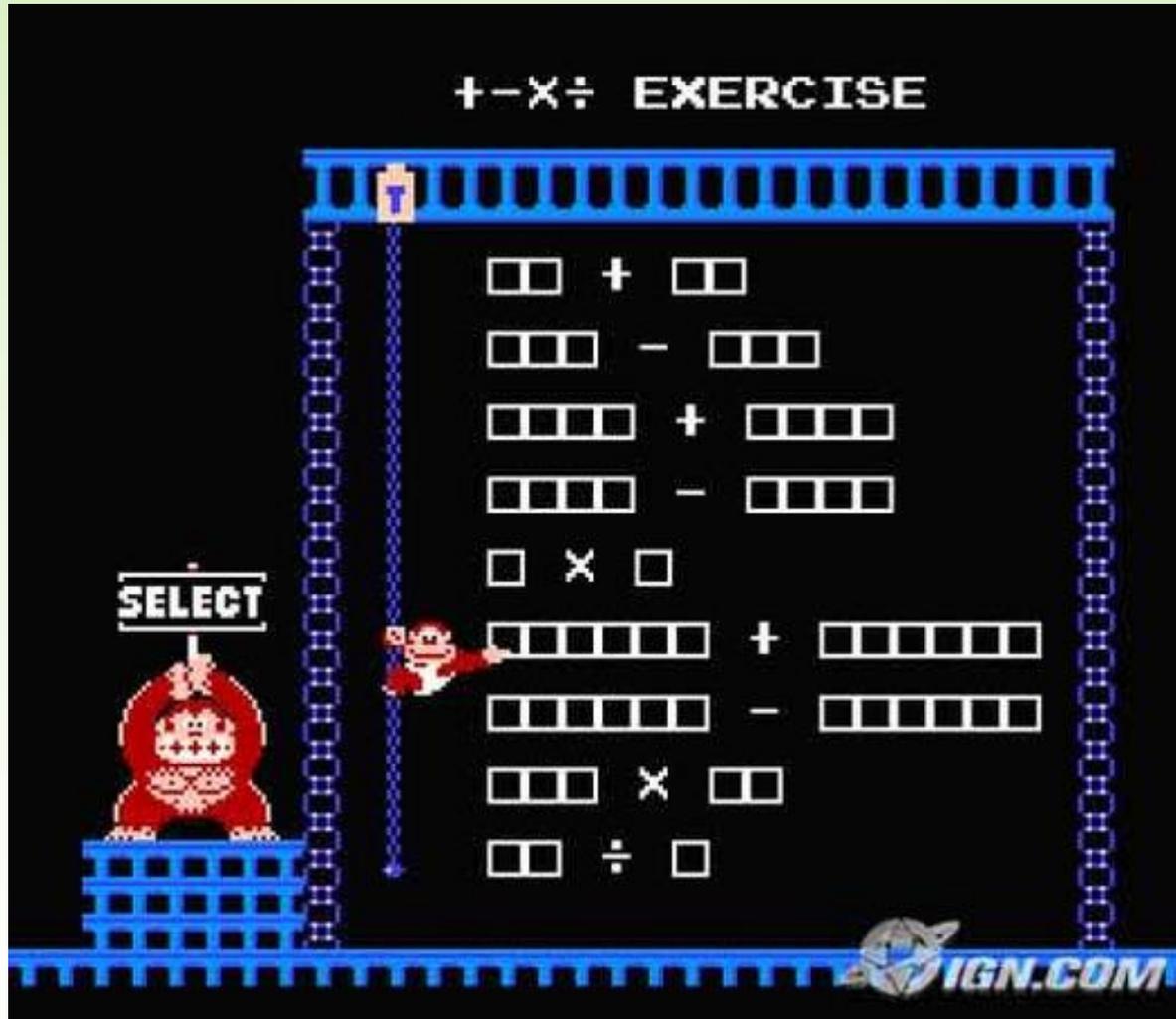
....all we needed to do was wrap a game around a lesson (or worksheet),

$\begin{array}{r} 29 \\ \times 30 \\ \hline \end{array}$	$\begin{array}{r} 33 \\ + 18 \\ \hline \end{array}$	$\begin{array}{r} 26 \\ + 7 \\ \hline \end{array}$	$\begin{array}{r} 31 \\ + 9 \\ \hline \end{array}$	$\begin{array}{r} 19 \\ \times 16 \\ \hline \end{array}$	$\begin{array}{r} 27 \\ \times 21 \\ \hline \end{array}$	$\begin{array}{r} 33 \\ + 10 \\ \hline \end{array}$	$\begin{array}{r} 4 \overline{) 40} \\ \hline \end{array}$	$\begin{array}{r} 3 \overline{) 3} \\ \hline \end{array}$	$\begin{array}{r} 27 \\ \times 30 \\ \hline \end{array}$
$\begin{array}{r} 35 \\ + 8 \\ \hline \end{array}$	$\begin{array}{r} 22 \\ \times 13 \\ \hline \end{array}$	$\begin{array}{r} 4 \overline{) 48} \\ \hline \end{array}$	$\begin{array}{r} 36 \\ \times 27 \\ \hline \end{array}$	$\begin{array}{r} 4 \overline{) 8} \\ \hline \end{array}$	$\begin{array}{r} 18 \\ + 21 \\ \hline \end{array}$	$\begin{array}{r} 28 \\ + 7 \\ \hline \end{array}$	$\begin{array}{r} 3 \overline{) 33} \\ \hline \end{array}$	$\begin{array}{r} 31 \\ + 19 \\ \hline \end{array}$	$\begin{array}{r} 3 \overline{) 12} \\ \hline \end{array}$
$\begin{array}{r} 34 \\ \times 7 \\ \hline \end{array}$	$\begin{array}{r} 36 \\ + 12 \\ \hline \end{array}$	$\begin{array}{r} 29 \\ \times 20 \\ \hline \end{array}$	$\begin{array}{r} 31 \\ + 14 \\ \hline \end{array}$	$\begin{array}{r} 20 \\ + 15 \\ \hline \end{array}$	$\begin{array}{r} 3 \overline{) 27} \\ \hline \end{array}$	$\begin{array}{r} 4 \overline{) 12} \\ \hline \end{array}$	$\begin{array}{r} 4 \overline{) 20} \\ \hline \end{array}$	$\begin{array}{r} 3 \overline{) 6} \\ \hline \end{array}$	$\begin{array}{r} 17 \\ \times 30 \\ \hline \end{array}$
$\begin{array}{r} 26 \\ + 12 \\ \hline \end{array}$	$\begin{array}{r} 32 \\ \times 8 \\ \hline \end{array}$	$\begin{array}{r} 17 \\ + 7 \\ \hline \end{array}$	$\begin{array}{r} 26 \\ + 7 \\ \hline \end{array}$	$\begin{array}{r} 17 \\ \times 16 \\ \hline \end{array}$	$\begin{array}{r} 23 \\ \times 27 \\ \hline \end{array}$	$\begin{array}{r} 33 \\ + 8 \\ \hline \end{array}$	$\begin{array}{r} 18 \\ \times 20 \\ \hline \end{array}$	$\begin{array}{r} 30 \\ \times 9 \\ \hline \end{array}$	$\begin{array}{r} 3 \overline{) 9} \\ \hline \end{array}$
$\begin{array}{r} 23 \\ + 28 \\ \hline \end{array}$	$\begin{array}{r} 25 \\ + 23 \\ \hline \end{array}$	$\begin{array}{r} 3 \overline{) 18} \\ \hline \end{array}$	$\begin{array}{r} 31 \\ + 19 \\ \hline \end{array}$	$\begin{array}{r} 22 \\ \times 14 \\ \hline \end{array}$	$\begin{array}{r} 23 \\ + 28 \\ \hline \end{array}$	$\begin{array}{r} 19 \\ \times 10 \\ \hline \end{array}$	$\begin{array}{r} 18 \\ + 11 \\ \hline \end{array}$	$\begin{array}{r} 33 \\ + 13 \\ \hline \end{array}$	$\begin{array}{r} 31 \\ + 15 \\ \hline \end{array}$
$\begin{array}{r} 3 \overline{) 12} \\ \hline \end{array}$	$\begin{array}{r} 31 \\ \times 20 \\ \hline \end{array}$	$\begin{array}{r} 29 \\ \times 24 \\ \hline \end{array}$	$\begin{array}{r} 32 \\ \times 13 \\ \hline \end{array}$	$\begin{array}{r} 19 \\ \times 7 \\ \hline \end{array}$	$\begin{array}{r} 24 \\ \times 22 \\ \hline \end{array}$	$\begin{array}{r} 36 \\ \times 26 \\ \hline \end{array}$	$\begin{array}{r} 19 \\ \times 30 \\ \hline \end{array}$	$\begin{array}{r} 30 \\ + 29 \\ \hline \end{array}$	$\begin{array}{r} 32 \\ \times 10 \\ \hline \end{array}$
$\begin{array}{r} 3 \overline{) 21} \\ \hline \end{array}$	$\begin{array}{r} 3 \overline{) 30} \\ \hline \end{array}$	$\begin{array}{r} 29 \\ \times 26 \\ \hline \end{array}$	$\begin{array}{r} 4 \overline{) 12} \\ \hline \end{array}$	$\begin{array}{r} 3 \overline{) 12} \\ \hline \end{array}$	$\begin{array}{r} 4 \overline{) 36} \\ \hline \end{array}$	$\begin{array}{r} 19 \\ + 20 \\ \hline \end{array}$	$\begin{array}{r} 4 \overline{) 32} \\ \hline \end{array}$	$\begin{array}{r} 28 \\ \times 13 \\ \hline \end{array}$	$\begin{array}{r} 3 \overline{) 24} \\ \hline \end{array}$
$\begin{array}{r} 25 \\ \times 10 \\ \hline \end{array}$	$\begin{array}{r} 30 \\ \times 21 \\ \hline \end{array}$	$\begin{array}{r} 3 \overline{) 3} \\ \hline \end{array}$	$\begin{array}{r} 33 \\ + 15 \\ \hline \end{array}$	$\begin{array}{r} 24 \\ + 14 \\ \hline \end{array}$	$\begin{array}{r} 26 \\ \times 19 \\ \hline \end{array}$	$\begin{array}{r} 4 \overline{) 8} \\ \hline \end{array}$	$\begin{array}{r} 4 \overline{) 20} \\ \hline \end{array}$	$\begin{array}{r} 23 \\ \times 10 \\ \hline \end{array}$	$\begin{array}{r} 3 \overline{) 27} \\ \hline \end{array}$
$\begin{array}{r} 26 \\ \times 23 \\ \hline \end{array}$	$\begin{array}{r} 3 \overline{) 6} \\ \hline \end{array}$	$\begin{array}{r} 3 \overline{) 15} \\ \hline \end{array}$	$\begin{array}{r} 3 \overline{) 9} \\ \hline \end{array}$	$\begin{array}{r} 30 \\ + 26 \\ \hline \end{array}$	$\begin{array}{r} 30 \\ \times 17 \\ \hline \end{array}$	$\begin{array}{r} 20 \\ \times 27 \\ \hline \end{array}$	$\begin{array}{r} 27 \\ + 22 \\ \hline \end{array}$	$\begin{array}{r} 3 \overline{) 15} \\ \hline \end{array}$	$\begin{array}{r} 27 \\ + 27 \\ \hline \end{array}$
$\begin{array}{r} 20 \\ + 16 \\ \hline \end{array}$	$\begin{array}{r} 17 \\ + 14 \\ \hline \end{array}$	$\begin{array}{r} 33 \\ \times 25 \\ \hline \end{array}$	$\begin{array}{r} 33 \\ \times 25 \\ \hline \end{array}$	$\begin{array}{r} 27 \\ + 18 \\ \hline \end{array}$	$\begin{array}{r} 3 \overline{) 15} \\ \hline \end{array}$	$\begin{array}{r} 4 \overline{) 32} \\ \hline \end{array}$	$\begin{array}{r} 3 \overline{) 9} \\ \hline \end{array}$	$\begin{array}{r} 4 \overline{) 24} \\ \hline \end{array}$	$\begin{array}{r} 18 \\ \times 9 \\ \hline \end{array}$

.... like so



.... and it would magically become fun.



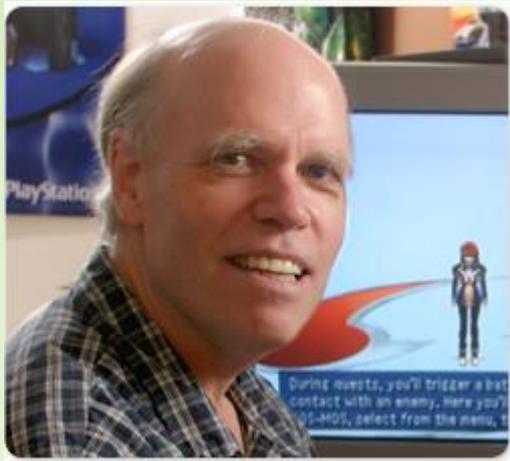
This, of course, is not true, and the resultant fall from grace left many educational game proponents reeling.

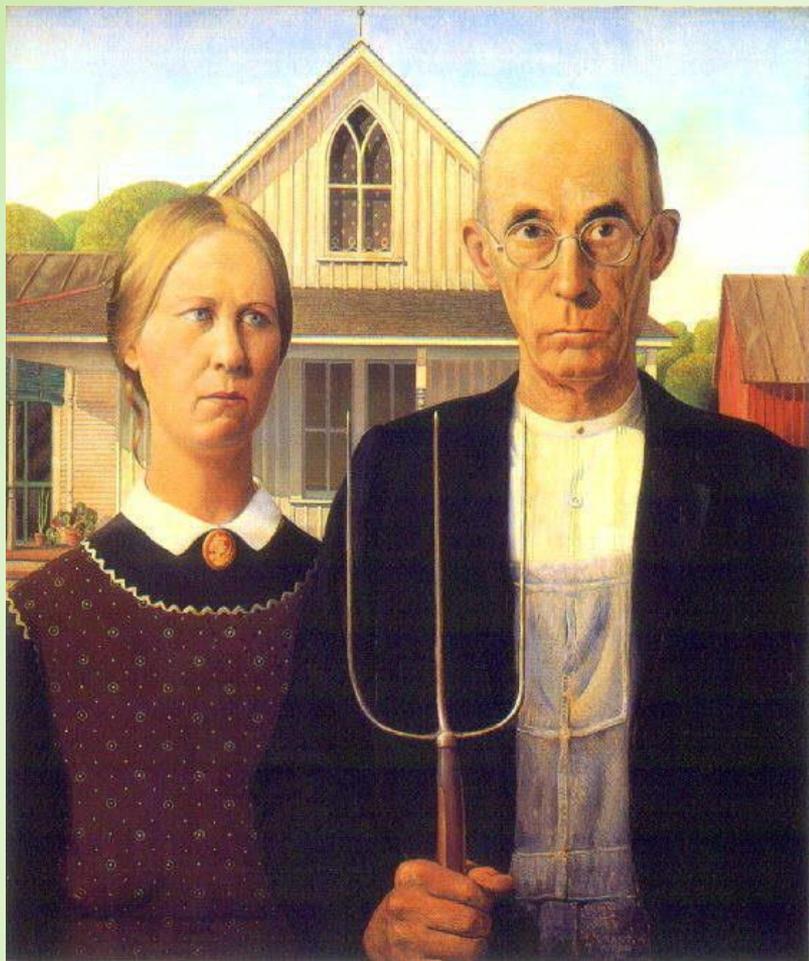


We now have a second chance, and we need to make sure we don't fall into the same trap again.



The game evangelists are valuable to be sure...





but
we need to be
realistic,



and if we don't have enough games out there
that live up to the hype,



the idea of using games to teach will once again become a pariah,



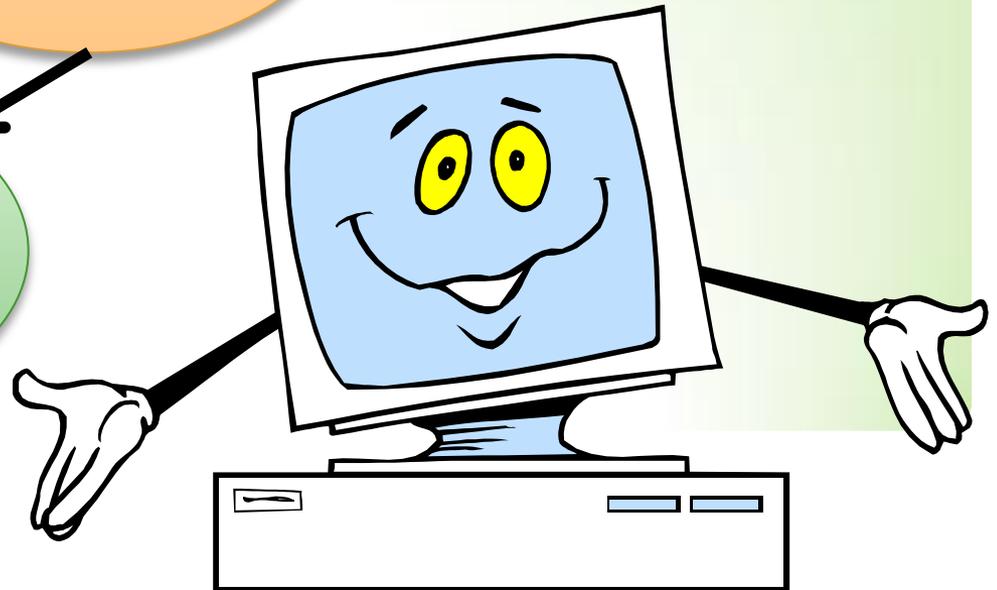
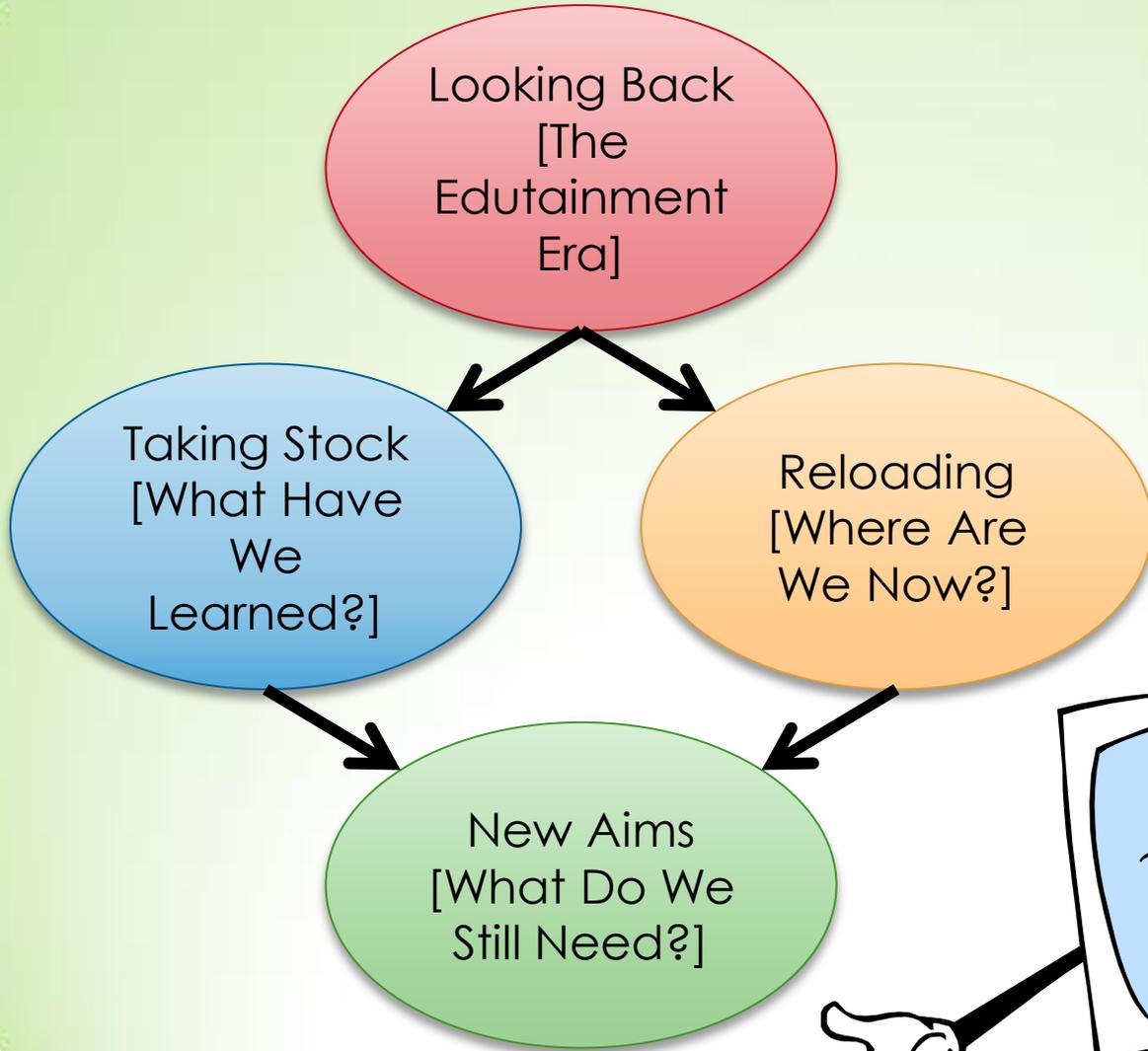
and the likelihood of a third chance is slim.



So,

how do we make it right this time?





The Plan



Step 1: Understand what happened last time.



A brief look at.....





Online
Timeline



The Edutainment Era

Step 1: Understanding what happened last time.

skip





What is Edutainment?

Educators:
edutainment = educational games

Game Developers:
edutainment = an insult



Definitions & Attitudes

- Digital games in infancy
- Excitement over new medium

Commercial Examples:

- Pac-Man, Tetris, Pong

Educational Examples:

- Math Fun!
- Brain Games
- Math-A-Magic!
- Hangman

The 1970s

LEMONSVILLE WEATHER REPORT

Definitions & Attitudes

- Digital games in infancy
- Alessi & Trollip [1985]
- Richard E. Clark [1983]

- Excitement over new medium continues
- Start of EdTech boom
- “tech is cool”

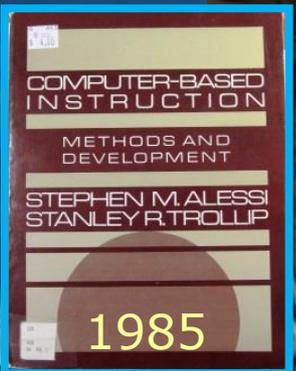
Commercial Examples:

- Super Mario Bros.,
Legend of Zelda (OoT)

Educational Games

- States and Capitals
- Dragon's Keep
- PET Nuclear Power Plant
- Mathblaster
- Reader Rabbit

The 1980s



Choose the correct answer

Simulations

Chapter 9

- Increase motivation
- Increase transfer
- Efficiency of transfer
- Uses the full power of the computer
- Often better than the real world
 - Safety
 - Control over aspects of reality – time; frequency of occurrence; distractions; less expensive; etc.
- Offers more instructionalness

Games

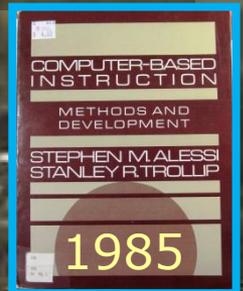
Chapter 10

- Much like simulations
- Powerful learning tools
- Increase motivation and focus
- Teacher is not the only judge of performance
- Difference: optional input by opponent
- It is not the game (wrapper) that makes it effective – it is the challenge

According to Alessi & Trollip

10/20/2014

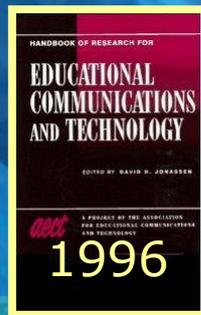
EduGaming 2014: Walking Backwards Keynote © K. Becker



Definitions & Attitudes

See:

- Alessi & Trollip [1991]
- Robert Kozma [1991]
- Richard Clark [1994]
- Robert Kozma [1994]
- Gredler [1996]



Comemrcial Examples

- Myst, Monkey Island, Street Fighter, Final Fantasy, Mario Kart

Educational Examples

- Carmen Sandiego
- Mario is Missing [[note](#)]
- Oregon Trail
- Toggle Trouble Math

The 1990s

Simulations

Chapter 4

- Better than tutorials and drills
- PLUS all the stuff they said before

Games

Chapter 5

- May or may not simulate reality
- Provide entertaining challenges
- PLUS everything they said before

According to Alessi & Trollip



Simulation =

- Must be complex & REAL (referred to as fidelity or validity)
- Participants have defined roles
- Data-rich environment, where students can execute range of strategies
- Feedback is in form of changes to situation
- Learning model is educational objective
- Understanding the model is the goal

Game =

- Learning embedded in game, not part of it
- Has rules, winning is important
- Winning should not have random factor
- No distracting bells and whistles
- Include directions in booklets
- Students shouldn't lose points when wrong
- Games rarely played differently from the way they were intended.
- Winning will take precedence over experimenting
- Games are less efficient learning models than other methodologies
- Educators have negative beliefs about games

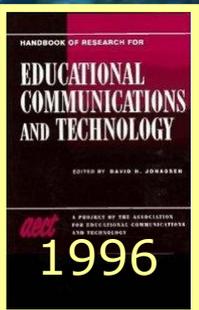
According to Gredler

10/26/2014

EduGaming 2014: Walking Backwards Keynote

© K. Beans

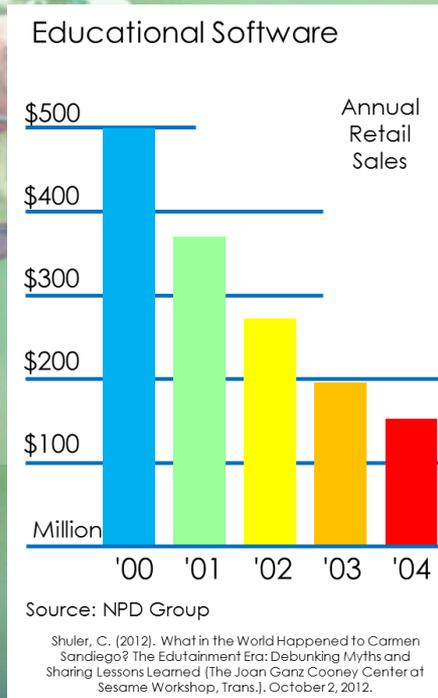
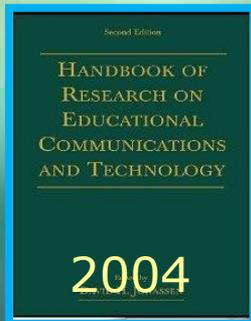
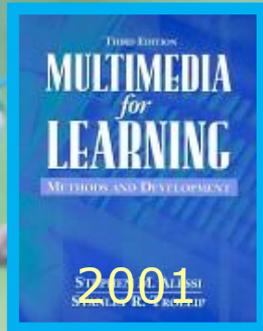
© 2001 SQUARE CO., LTD. CHARACTER DESIGN: TETSUYA



Definitions & Attitudes

See:

- Alessi & Trollip [2001]
- Gredler [2004]



Commercial Examples

- Half-Life, Deus Ex, Chrono Cross, Everquest, Pikmin, Metroid Prime, Need for Speed

Educational Examples

- Zoombinis, Jerusalem, Real Lives, Zoo Tycoon

The 2000's (pre-WoW)



©2004 Nintendo

Simulations

Chapter 7

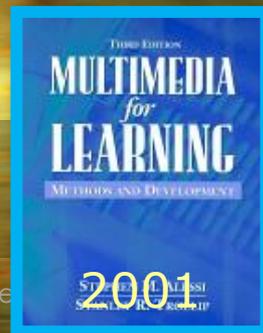
- All they said before
- **Most challenging of all methodologies to design**
 - Need to know: content; learners; many complexities; sophisticated programming;

Games

Chapter 8

- Called '**edutainment**'
- **Mostly repetitive practice**
- Focus is now on the motivational qualities of games
- **Hard to make games**
- Must
 - Have worthwhile learning objectives
 - Be fun
 - Game goals must reinforce learning goals
- Requires significant effort

According to Alessi & Trollip



Definitions & Attitudes

- Richard E. Clark [2007]
- AECT [2008]
No Games or Sims....
“Modeling Technologies”
- *“As a parent I object to having my child “play” on the computer when he has completed some piece of work. I want my kids working at school. I can use computer games at home for there (sic.) entertainment. I also think that “edutainment” as a name is attempting to give computer games some degree of educational value. My students come to school to learn not to be entertained. Would you want your university profs. entertaining you?” – teacher, 2005*

Commercial Examples

- Nintendogs, Eve, Lineage, Guitar Hero, Call of Duty, Elder Scrolls Oblivion, Spore, Grand Theft Auto, Portal

Educational Examples

- Stalin’s Dilemma, Killer Flu, Textrolpolis, Harpooned, Wii Fit



The 2000's (post-WoW)

Attitudes

- AECT [2014]
 - Model-Based Instruction
 - Immersive Simulations
 - Game Based Learning
- Mobile
- Short Form & Mini Games
- Viable Supplement

Educational Examples

- Sweatshop, Professor Layton, Poverty is Not a Game, Seismic Duck, Spent, Osy Osmosis

2010s (now)

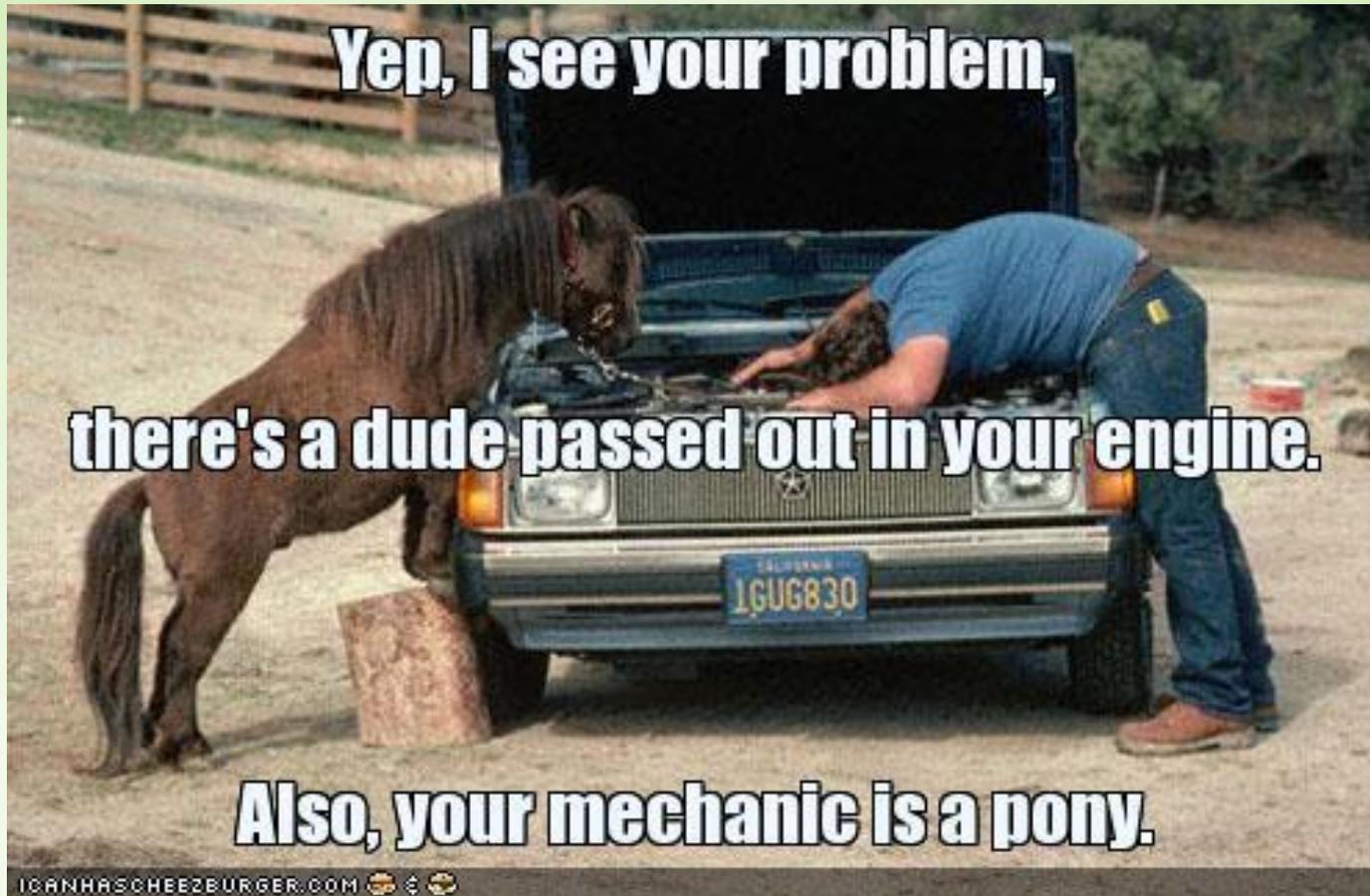




Fast-Forward

back





What Have We Learned?

What to Do & What to Avoid

back





Good....



Bad....

- Integration of Learning and Game Goals I ←VS→
- Wrapping a Lesson in a Game



What Have We Learned?

back

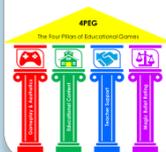


Good....



Bad....

- Integration of Learning and Game Goals ←VS→
- Attention to Detail ←VS→
- Wrapping a Lesson in a Game
- Cheap production



What Have We Learned?

back



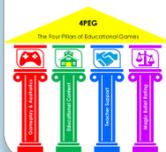
Good....

- Integration of Learning and Game Goals
- Attention to Detail
- Robust



Bad....

- Wrapping a Lesson in a Game
- Cheap production
- Glitchy



What Have We Learned?

back



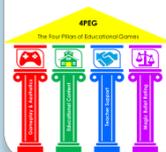
Good....

- Integration of Learning and Game Goals
- Attention to Detail
- Robust
- Easy to Use



Bad....

- Wrapping a Lesson in a Game
- Cheap production
- Glitchy
- Demanding (time, resources,...)



What Have We Learned?

back



Good....



Bad....

- Integration of Learning and Game Goals ←VS→
- Wrapping a Lesson in a Game
- Attention to Detail ←VS→
- Cheap production
- Robust ←VS→
- Glitchy
- Easy to Use ←VS→
- Demanding (time, resources,...)
- Clear Goals ←VS→
- Mystery / Random Play



What Have We Learned?

back

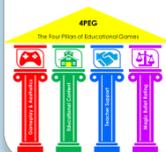


Good....



Bad....

- Integration of Learning and Game Goals ←VS→ • Wrapping a Lesson in a Game
- Attention to Detail ←VS→ • Cheap production
- Robust ←VS→ • Glitchy
- Easy to Use ←VS→ • Demanding (time, resources,...)
- Clear Goals ←VS→ • Mystery / Random Play
- Integration of Learning and Game Goals II ←VS→ • POP-Ups / Too Much Text



What Have We Learned?

back

And Three More: (Of My Own)

1. Decorative Media Principle
2. Becker's Lazy Test
3. Magic Bullet 

What Have We Learned?

back



Promotes:

- Scaffolding
- Interest
- Cues (mnemonics)
- Mental Model Formation



Decorative Media Principle



- VIDEO : all about visual
- Games : about interaction



Linear vs. Interactive Media



Attractive
=
Good



Decorative Media Trap





Privacy Playground

The First Adventure of the Three Cy

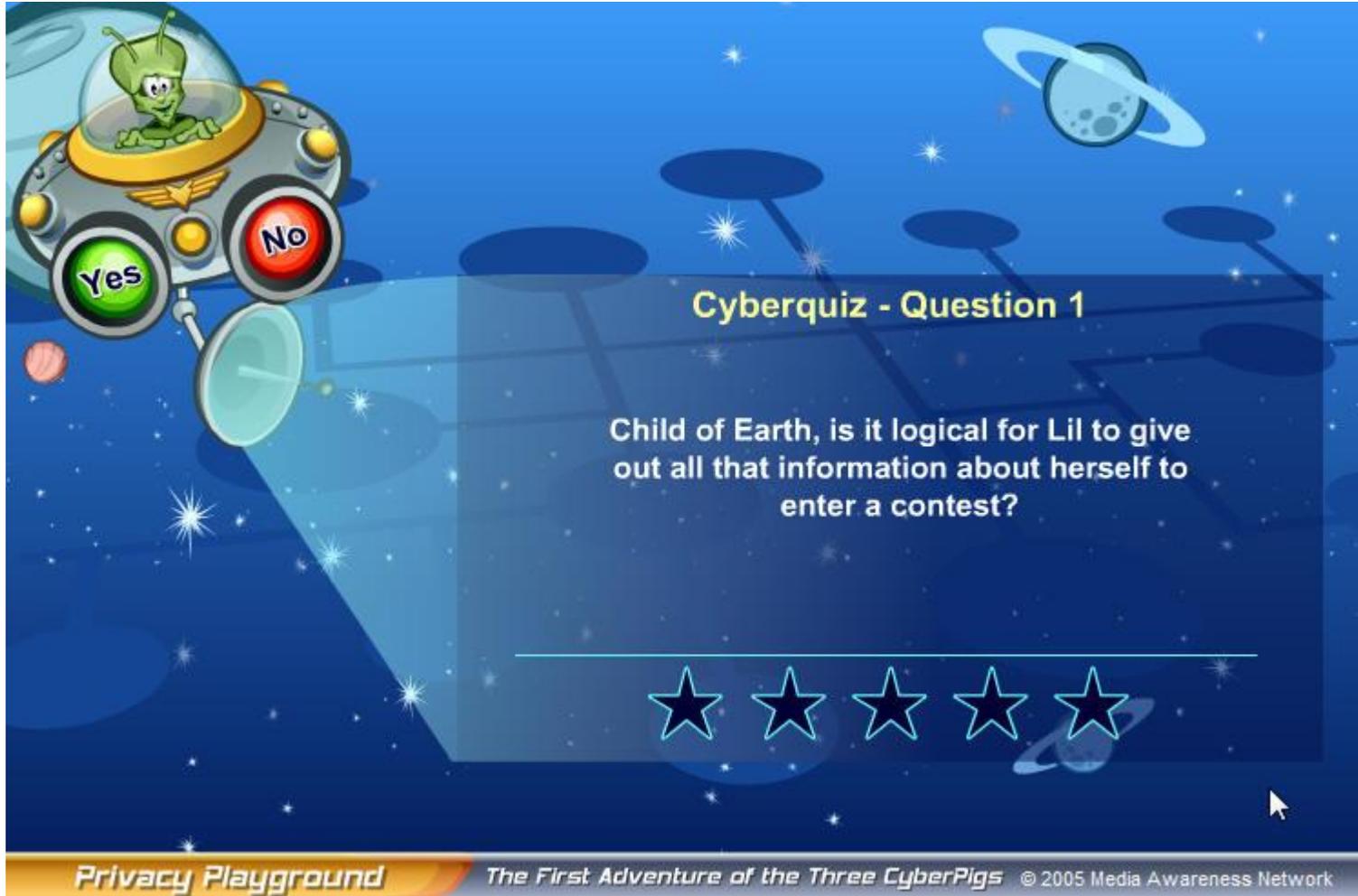


Privacy Playground

The First Adventure of the Three CyberPigs © 2005 Media Awareness Network

Ok so far..





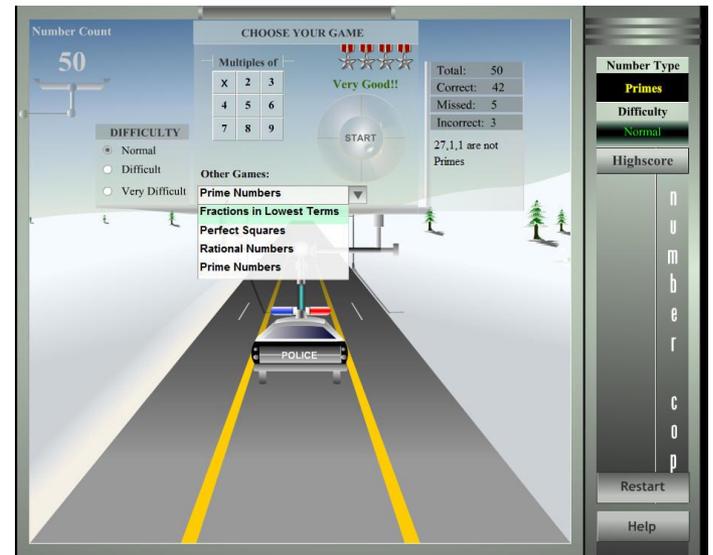
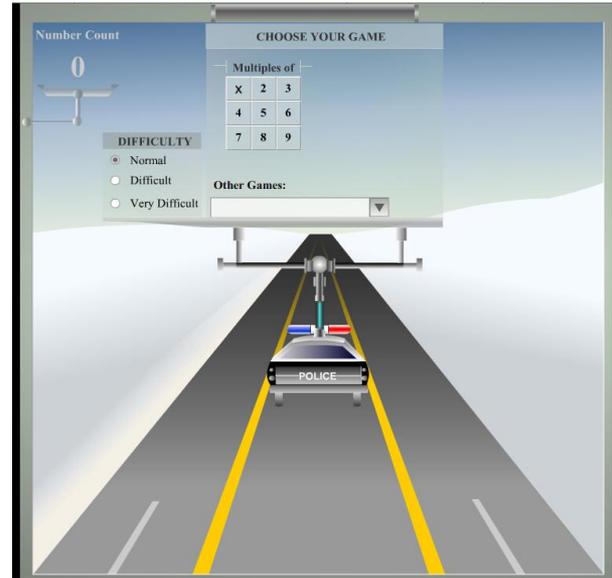
THIS is the game ?!





Decorative Media Trap





Wrapper



CHAIN REACTION

Start ▶

Close Window

Put the food chain together

CHAIN REACTION

Northern Food Chain

The food chain below is very simple. Out in the wild there are a lot of different food chains joined together. This is called a "food web".

You have 0 correct items in your food chain. Try AGAIN

Test the FOOD CHAIN

◀ Back

Close Window

Put the food chain together

CHAIN REACTION

Forest Food Chain

The food chain below is very simple. Out in the wild there are a lot of different food chains joined together. This is called a "food web".

You have 0 correct items in your food chain. Try AGAIN

Test the FOOD CHAIN

◀ Back

Close Window

Different Wrapper



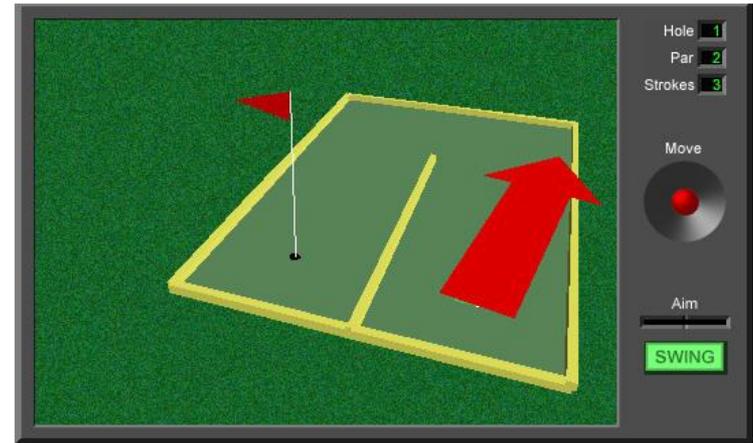
We reviewed each of these games to make sure that they provide students with skill development and critical thinking sequences.



Miniature Golf Course 1

Course 1

Practice



Other Courses



Functionality





Save the World



DNA
THE
DOUBLE
HELIX

ORGANISM 1
COPYING

ORGANISM 2

ORGANISM 3

POINTS
18

22 mutations occurred in the left DNA-molecule and 20 occurred in the right DNA-molecule. Up to three mutations are accepted. No DNA-helices are created.

In reality only three mutations are accepted in the human genome. Three faults out of three billion possible...

NEXT ▶

NUMBER OF
CHROMOSOMES
20

BASE PAIRS
(IN MILLIONS)
2500

GENES
22000

DNA
THE
DOUBLE
HELIX

ORGANISM 1
COPYING

ORGANISM 2

ORGANISM 3

POINTS
18

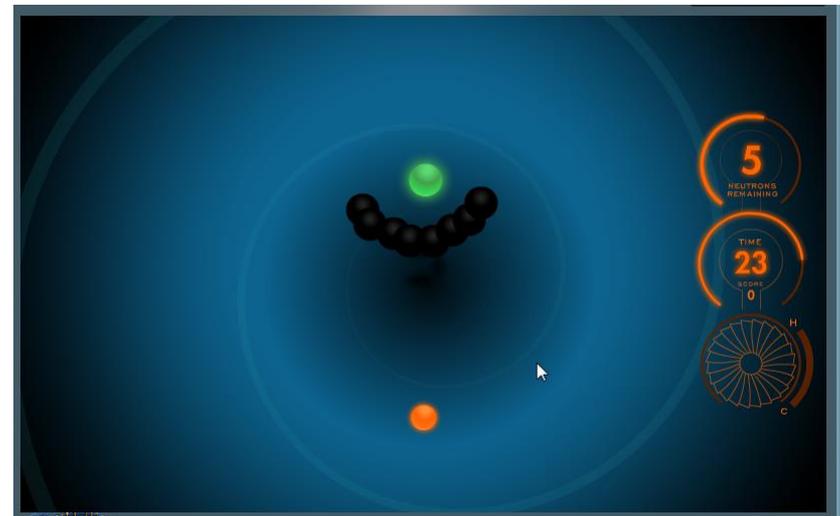
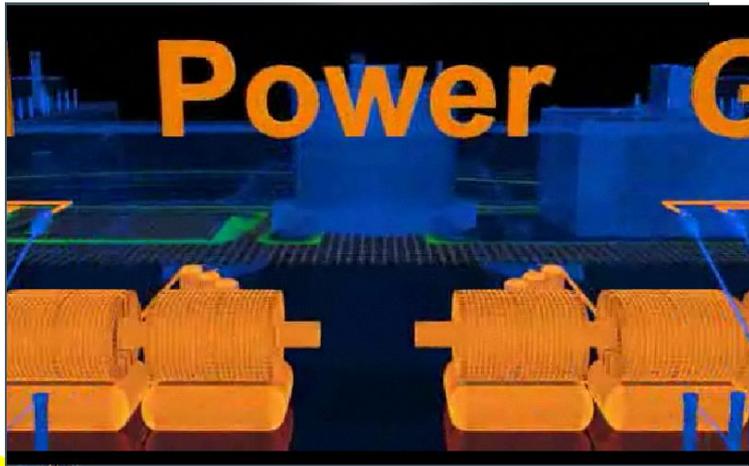
NUMBER OF
CHROMOSOMES
16

BASE PAIRS
(IN MILLIONS)
2103

GENES
18510

DNA Game





Car crash victims

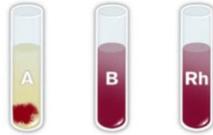
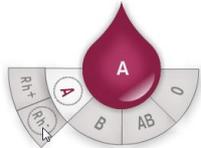


Hi and welcome to the emergency department at this hospital!

Your challenge is to save three patients who have been in a car accident and need blood transfusions. It is your job to blood type each patient and give them the correct blood. Each patient has a "health meter" displayed that monitors their condition during blood transfusion. Try to avoid making mistakes or the patient's condition will deteriorate! If you make no mistakes you will get all five out of five blood drops in the end.

→ Proceed

Select patient



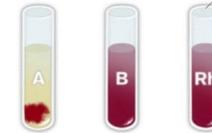
REAGENTS WITH A, B OR RH ANTIBODIES



Drag a blood bag and drop it on top of the blood bag rack! Click on a bag to see the content.

Required Bloodbags
2

Blood Bank



REAGENTS WITH A, B OR RH ANTIBODIES

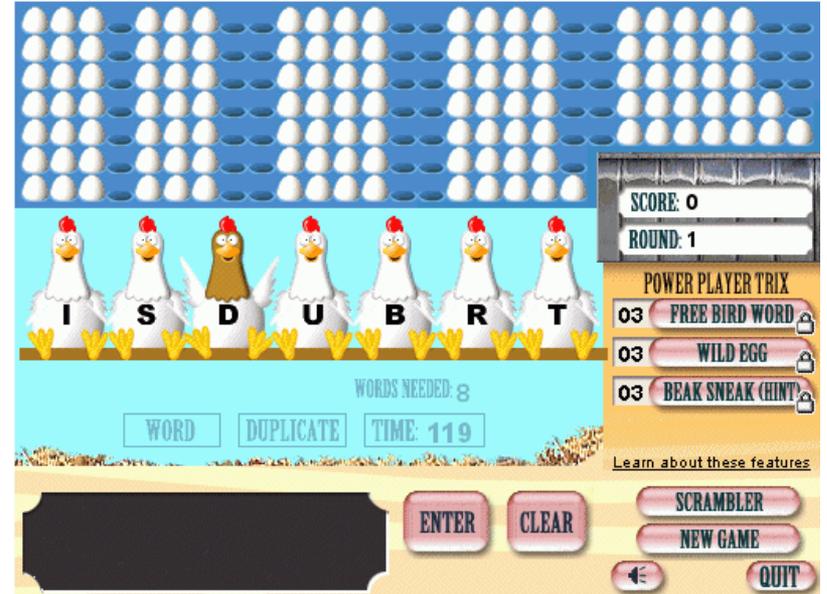
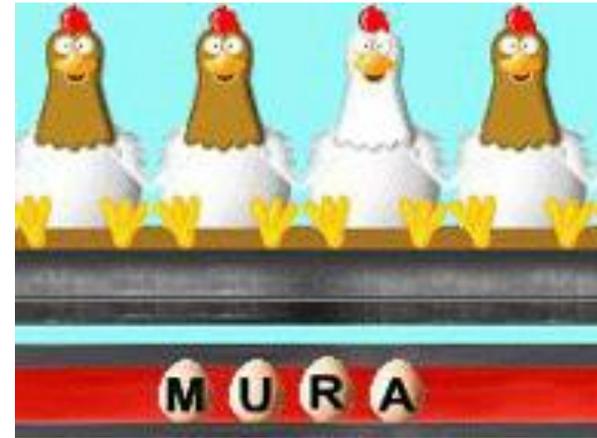
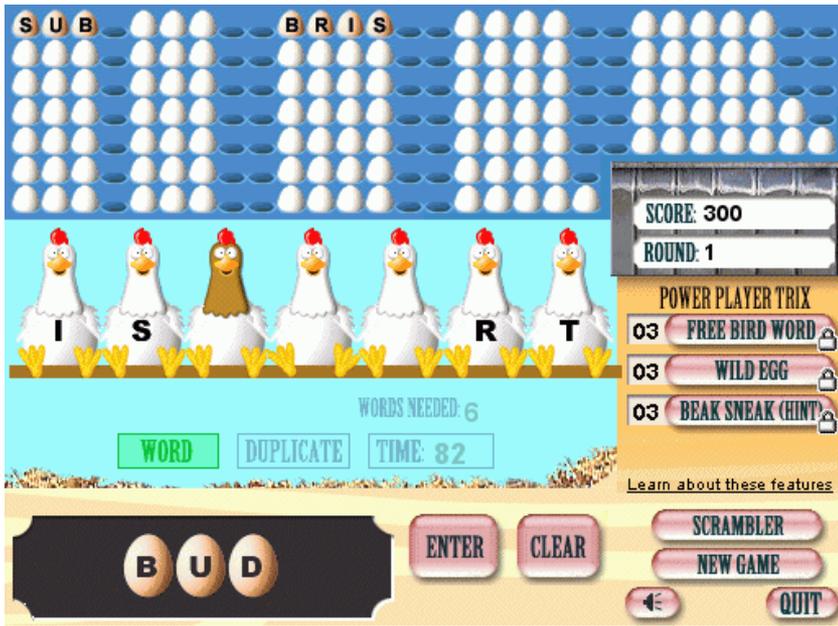


REAGENTS WITH A, B OR RH ANTIBODIES



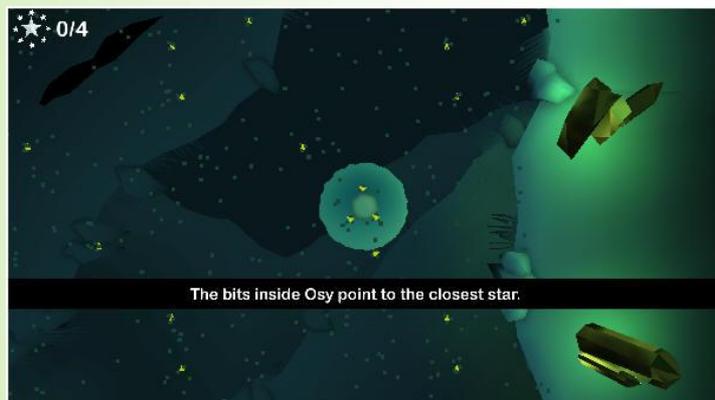
Doing it right...





Doing it right...





Becker's Lazy Test (BLT)

Is it possible to get through the game without learning anything?



Resource Details

Gambling Never Pays



Mission 3 – Gambling Never Pays

The e-Bug Detective Game is designed for 13-15 year olds, whereby the player becomes an "e-Bug Investigator" who attends the scene of an 'incident' that involves microbes. There are four missions in total – each involving a mystery that the player needs to solve. The overall mystery is sub-divided into multiple problems that must first be addressed, leading the player to their overall conclusion. The player must find evidence to support and negate their own ideas, in addition to those presented by the characters in the game. In the process of solving the mysteries, the player learns about microbes. It is designed for 13-15 years old.

PLAY NOW

Share



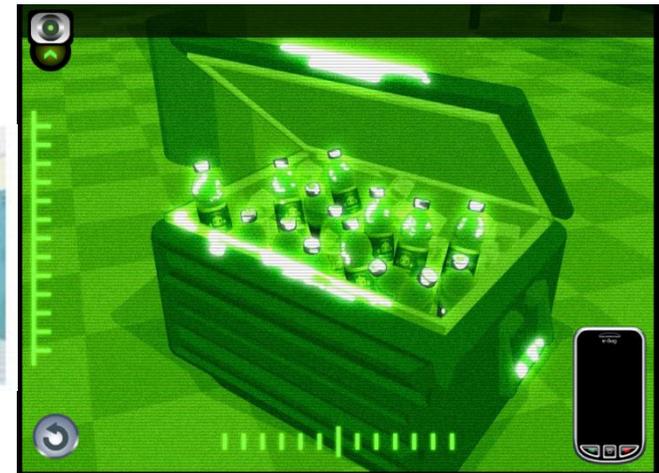
Big C

His name is Nathan and he's been placed in charge



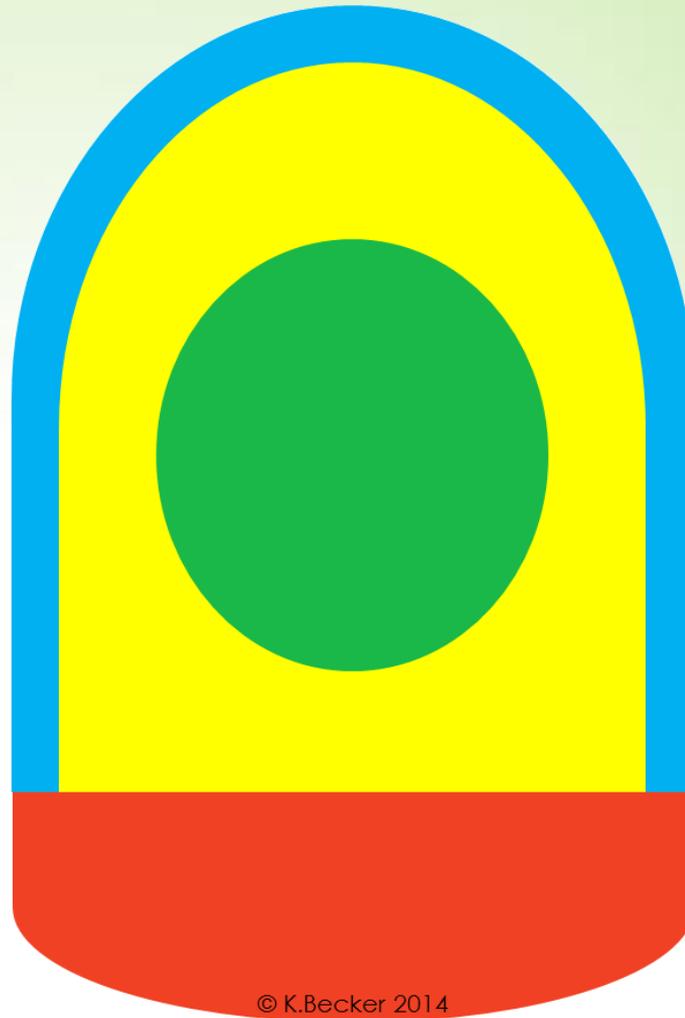
Alyx

The equipment has booted up and I'm almost ready



Passing the BLT





© K.Becker 2014

The Magic Bullet

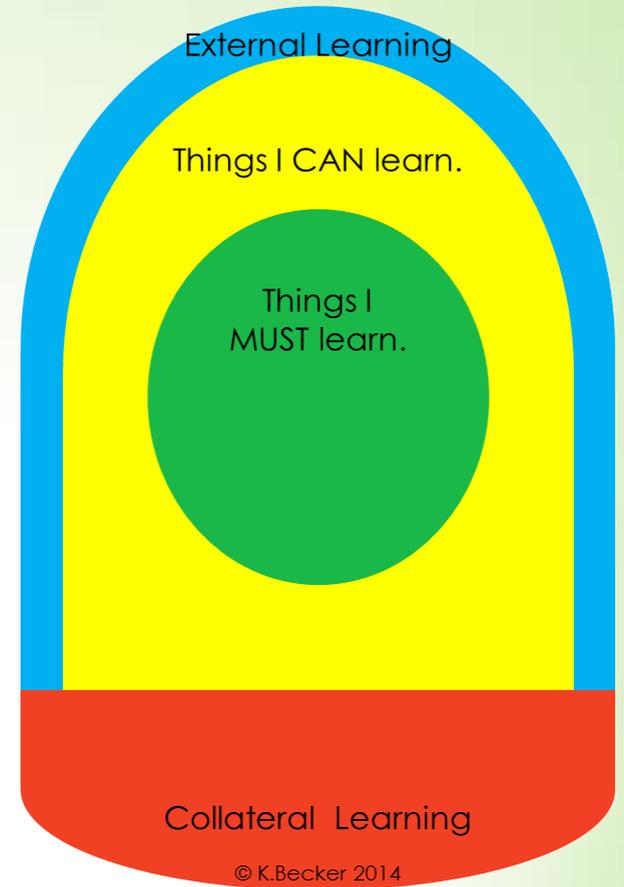
A lens through which to examine learning in a game.



All learning in a game can be classified in one (or more) categories.

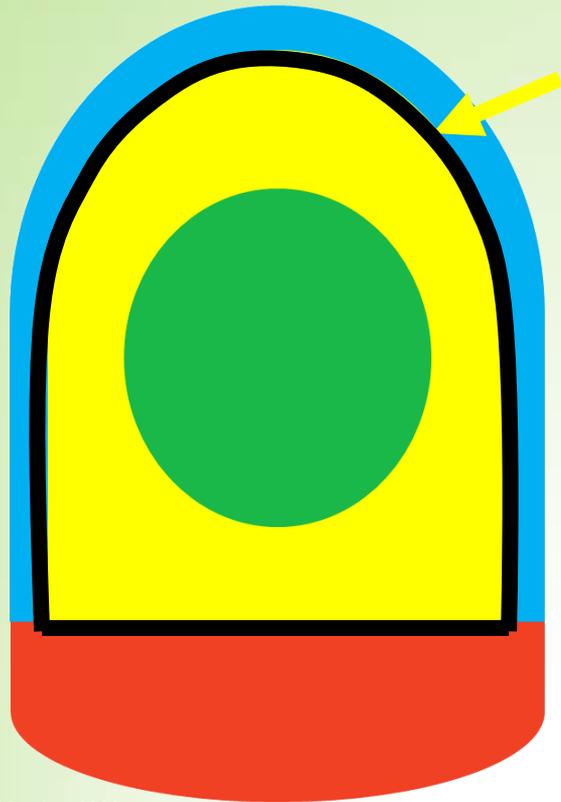
Four criteria for assessment in digital games:

1. Things We Can Learn
2. Things We Must Learn
3. Collateral Learning
4. External Learning



The Bullet





Deliberately designed by those who created the game
Includes things designers *hope* people will take up
Includes game-specific objectives as well as general ones

© K.Becker 2013

Magic Bullet Color Code

Things I CAN learn.
(Field)

Things I MUST learn.
(Core Learning)

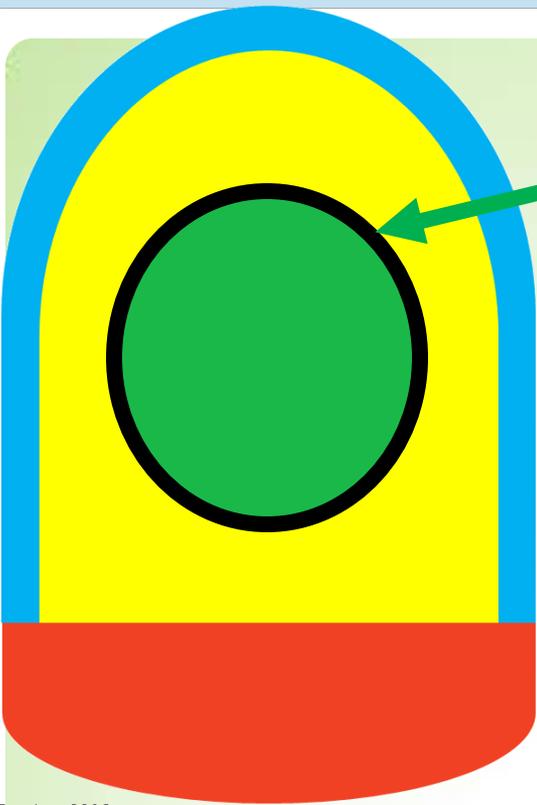
External Learning
(Scaffolding)

Collateral Learning
(Incidental Learning)

© K.Becker 2013

Things I Can Learn





Should (normally) be a subset of the first category
Required in order to achieve a specific goal or to win
Includes strategy

Magic Bullet Color Code

Things I CAN learn.
(Field)

Things I MUST learn.
(Core Learning)

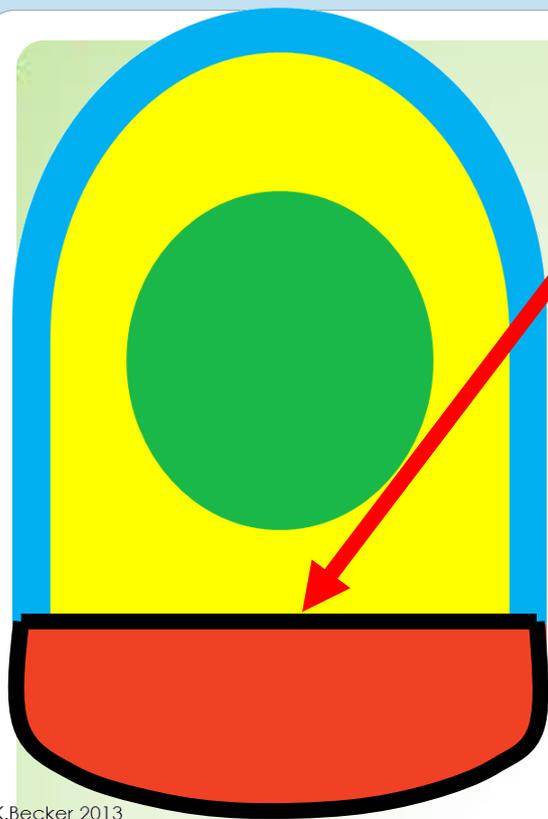
External Learning
(Scaffolding)

Collateral Learning
(Incidental Learning)

© K.Becker 2013

Things I MUST Learn





Other things we can learn

- these are not necessarily designed into the game, although sometimes designers may hope that players choose to take these up

Have NO impact on success in the game

Magic Bullet Color Code

Things I CAN learn.
(Field)

Things I MUST learn.
(Core Learning)

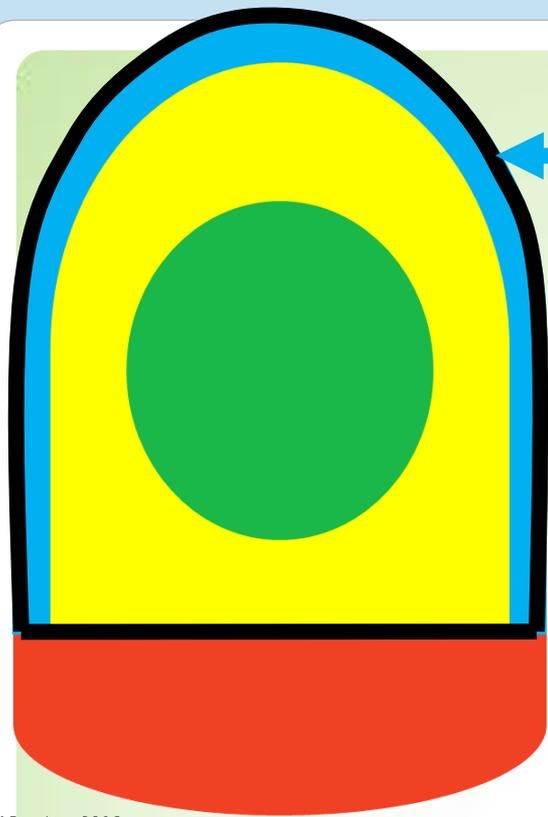
External Learning
(Scaffolding)

Collateral Learning
(Incidental Learning)

© K.Becker 2013

Collateral Learning





Not *technically* considered part of the normal gameplay
CAN impact success in the game
Includes social learning and outside communities

Also includes Cheats

- typically designed into the game for testing purposes
- often left in the game once it ships
- deliberate design elements on the part of the designers

**Magic Bullet
Color Code**

Things I **CAN** learn.
(Field)

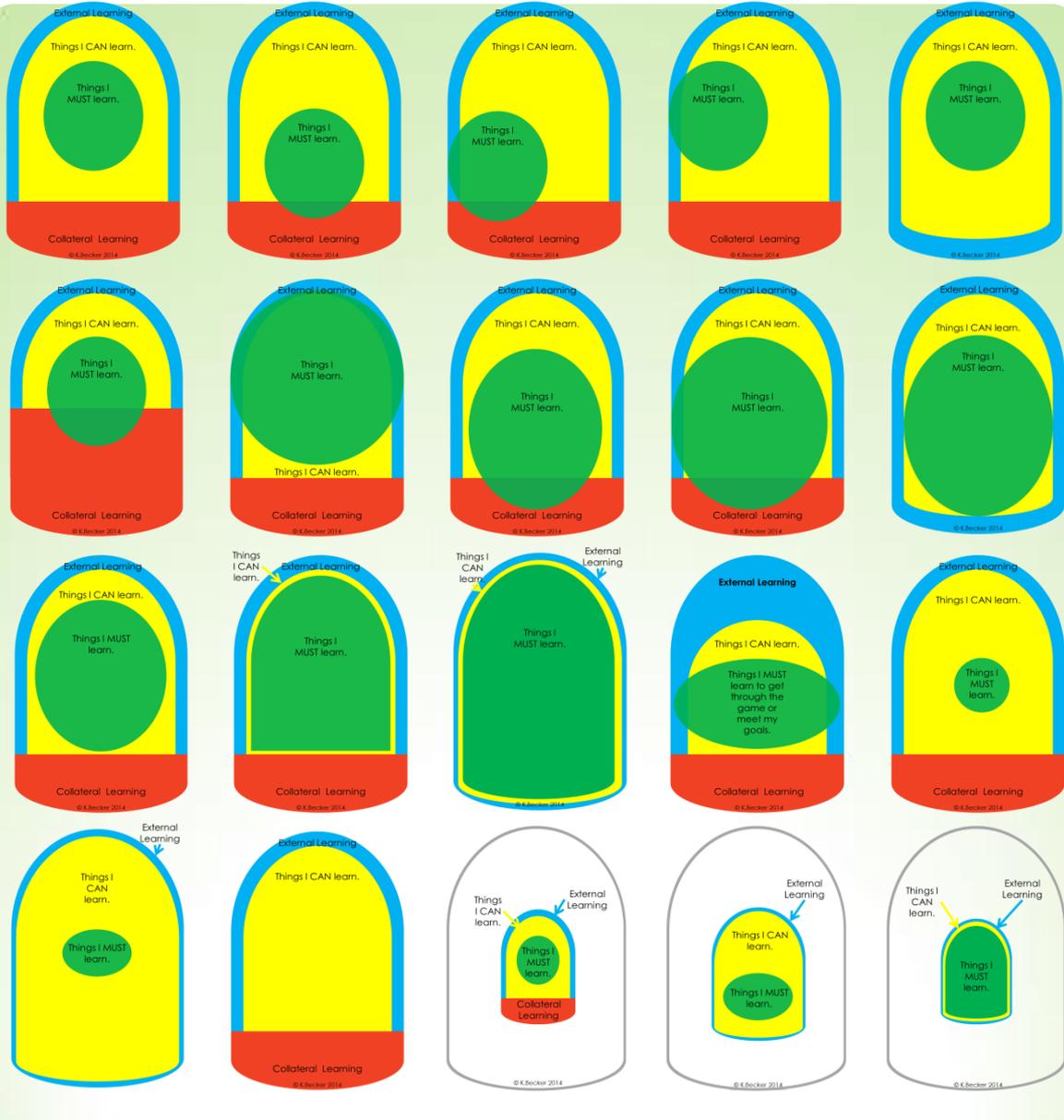
Things I **MUST** learn.
(Core Learning)

External Learning
(Scaffolding)

Collateral Learning
(Incidental Learning)

External Learning





Variations on a Theme.



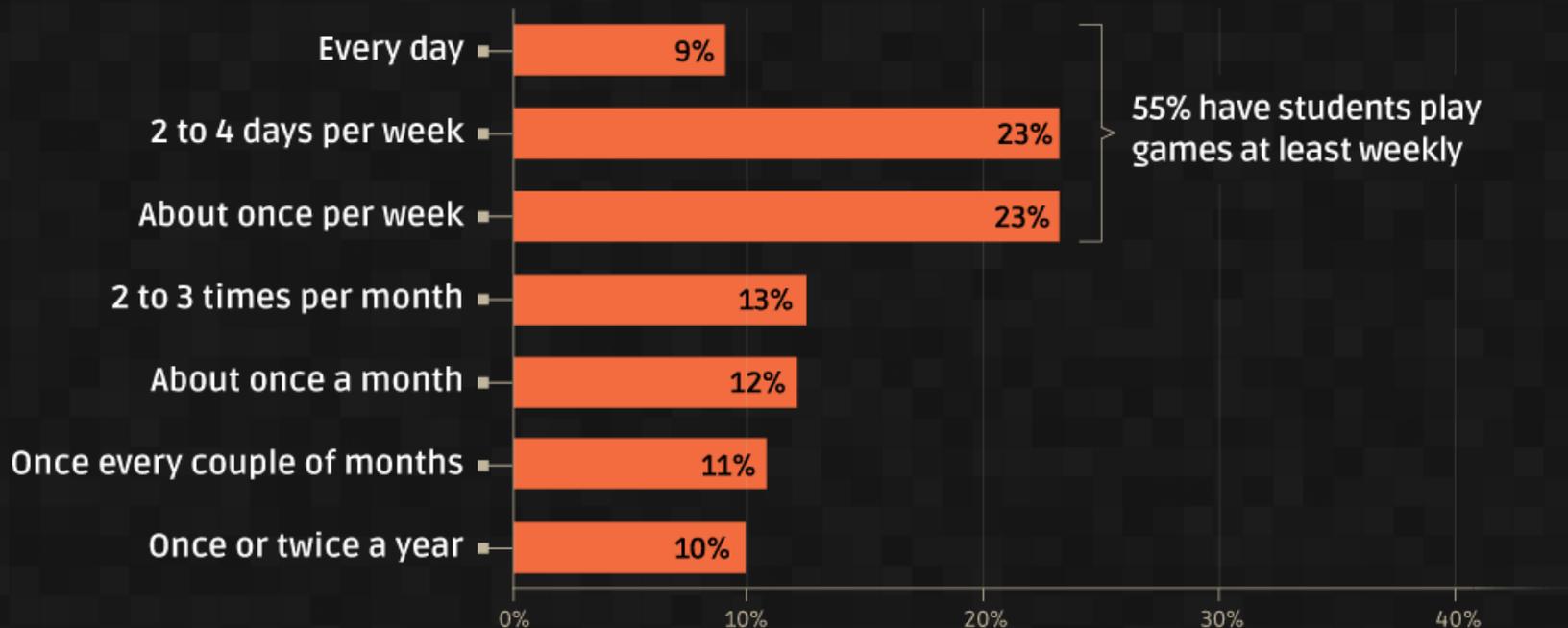


Where We Are Now?

Step 2: Taking Stock



How frequently do students use digital games in your classroom?



gamesandlearning.org

Source: The National Survey of Digital Game Use Among Teachers is a project of the Games and Learning Publishing Council and produced by the Joan Ganz Cooney Center, with support from the Bill and Melinda Gates Foundation. See gamesandlearning.org

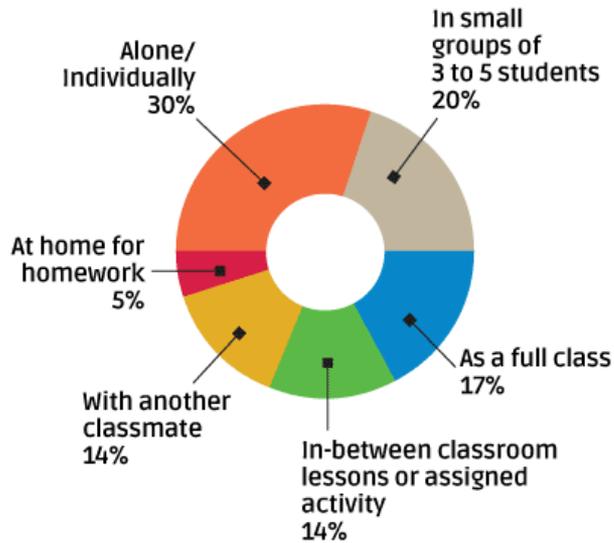
Among K-8 teachers who use digital games in teaching (N=513)

Participants were asked to check all that apply

Games are Being Used in Schools



How do you typically have your students use digital games?

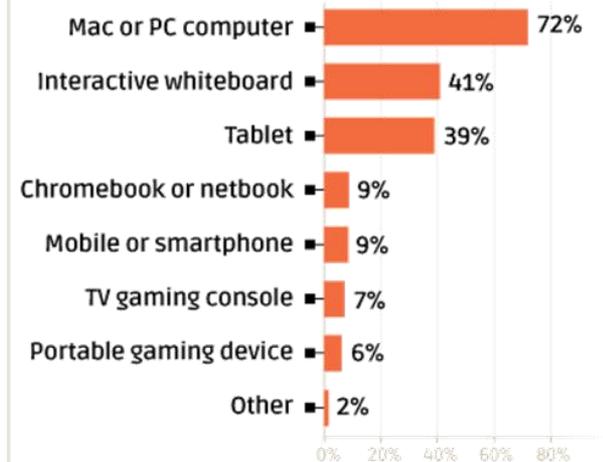


gamesandlearning.org

Source: The National Survey of Digital Game Use Among Teachers is a project of the Games and Learning Publishing Council and produced by the Joan Ganz Cooney Center, with support from the Bill and Melinda Gates Foundation. See gamesandlearning.org

Among K-8 teachers who use digital games in teaching (N=513)

What devices do students typically use to access digital games in your classroom?



gamesandlearning.org

Source: The National Survey of Digital Game Use Among Teachers is a project of the Games and Learning Publishing Council and produced by the Joan Ganz Cooney Center, with support from the Bill and Melinda Gates Foundation. See gamesandlearning.org/URL

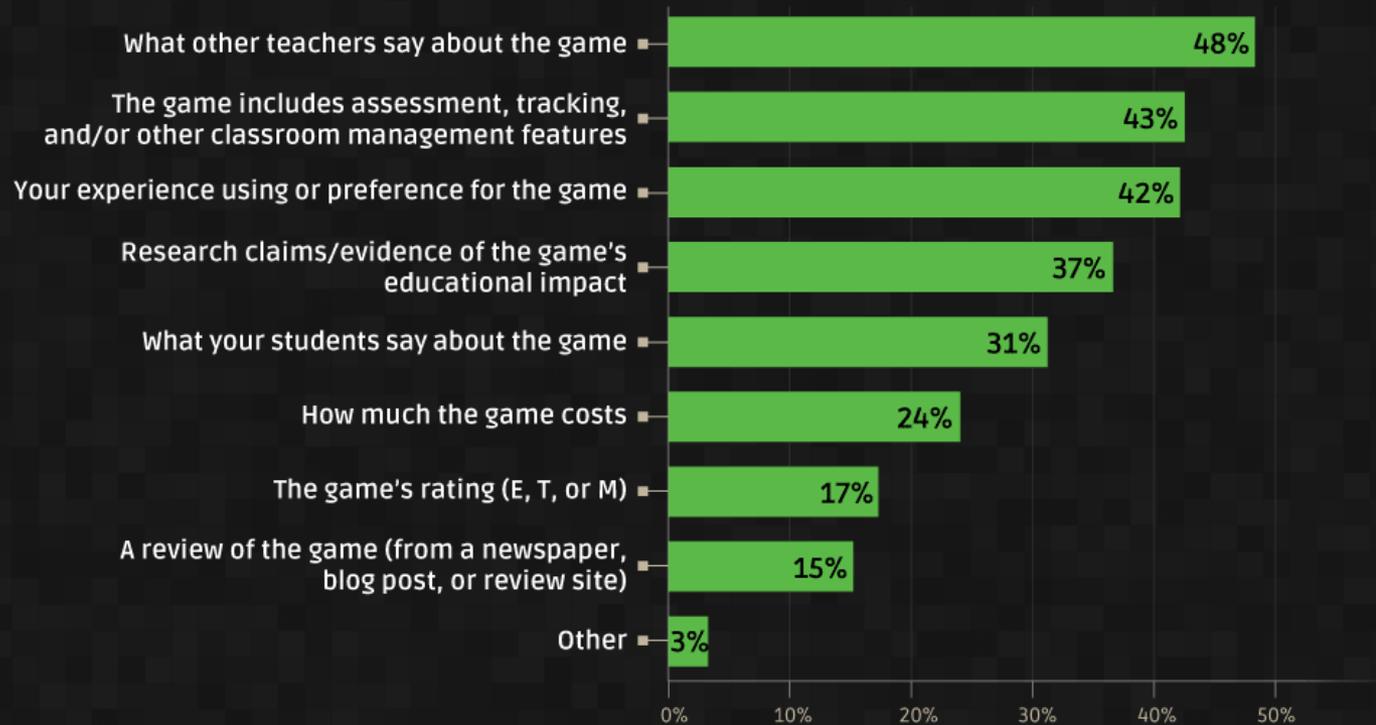
Among K-8 teachers who use digital games in teaching (N=513)

Participants were asked to check all that apply

1/3 Solo ; 1/2 Group; Mostly PCs



When you select games to use with your students, what influences your decision?



gamesandlearning.org

Source: The National Survey of Digital Game Use Among Teachers is a project of the Games and Learning Publishing Council and produced by the Joan Ganz Cooney Center, with support from the Bill and Melinda Gates Foundation. See gamesandlearning.org

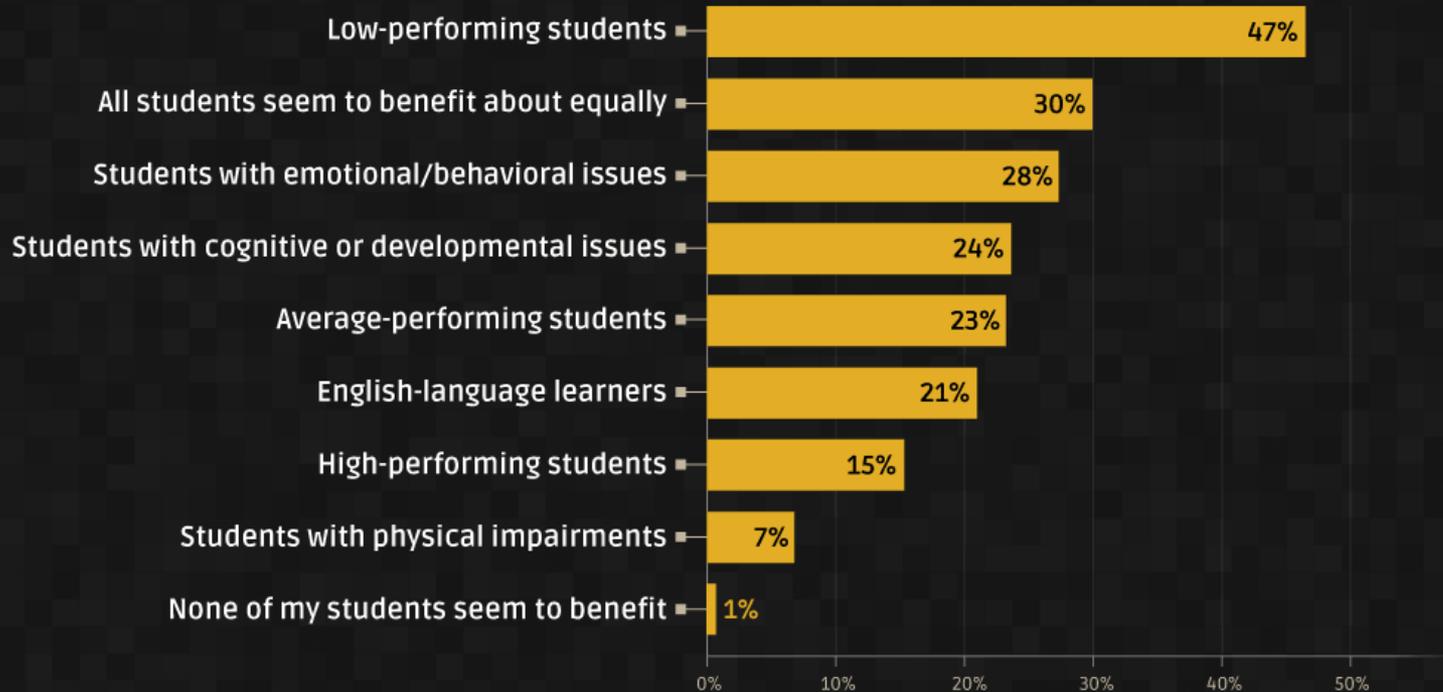
Among K-8 teachers who use digital games in teaching (N=513)

Participants were asked to check all that apply

How Do Teachers Decide?



Which students have you seen benefit most from instruction involving digital games?



gamesandlearning.org

Source: The National Survey of Digital Game Use Among Teachers is a project of the Games and Learning Publishing Council and produced by the Joan Ganz Cooney Center, with support from the Bill and Melinda Gates Foundation. See gamesandlearning.org

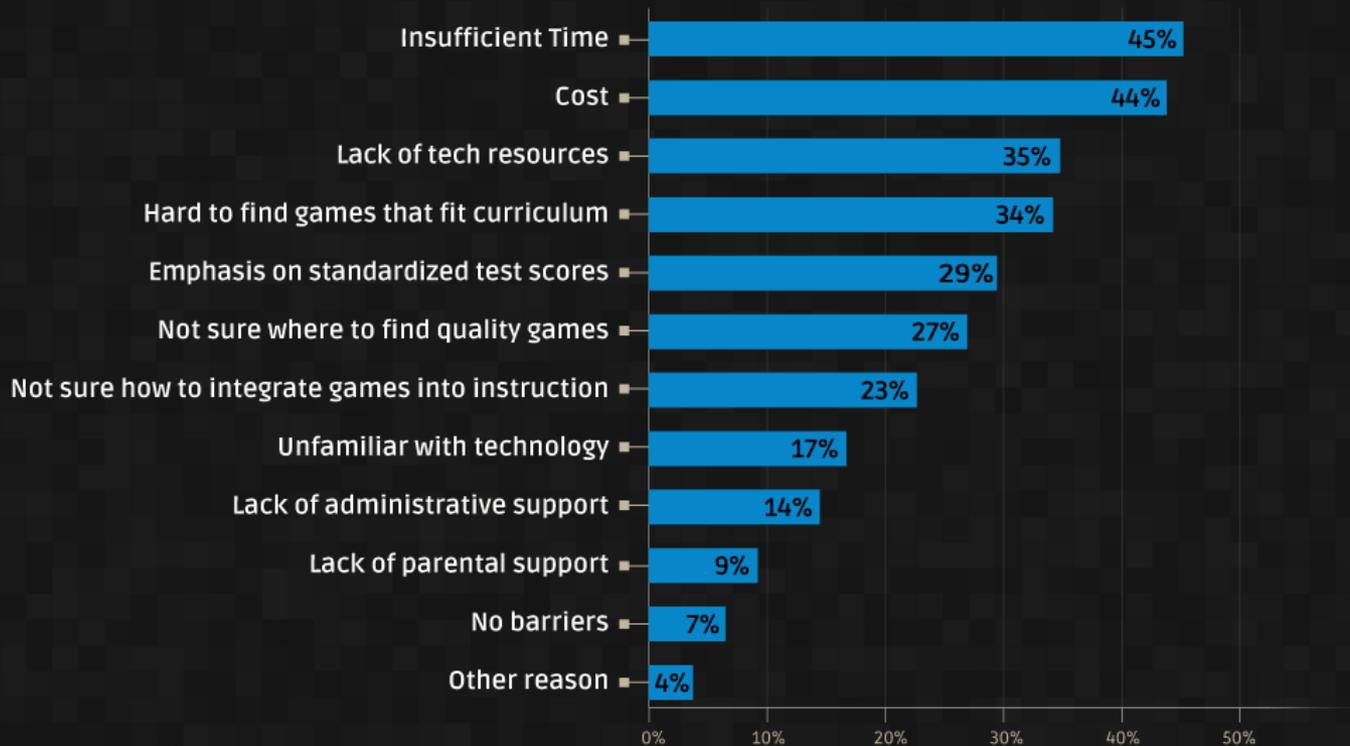
Among K-8 teachers who use digital games in teaching (N=513)

Participants were asked to check all that apply

Who Benefits the Most?



What are the greatest barriers teachers face in using digital games in the classroom?



gamesandlearning.org

Source: The National Survey of Digital Game Use Among Teachers is a project of the Games and Learning Publishing Council and produced by the Joan Ganz Cooney Center, with support from the Bill and Melinda Gates Foundation. See gamesandlearning.org/URL

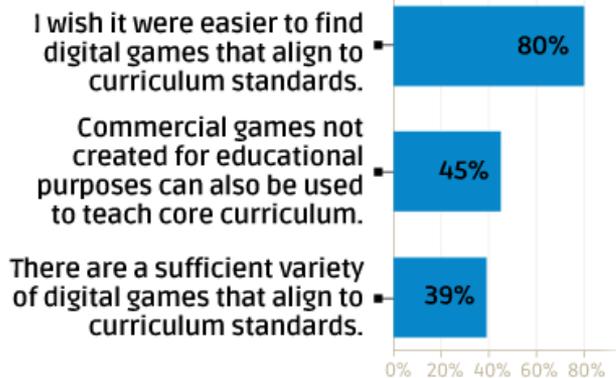
Among K-8 teachers who completed survey (N=694)

Participants were asked to check all that apply

Barriers



Based on your experience using games in your teaching, do you agree with these statements?



gamesandlearning.org

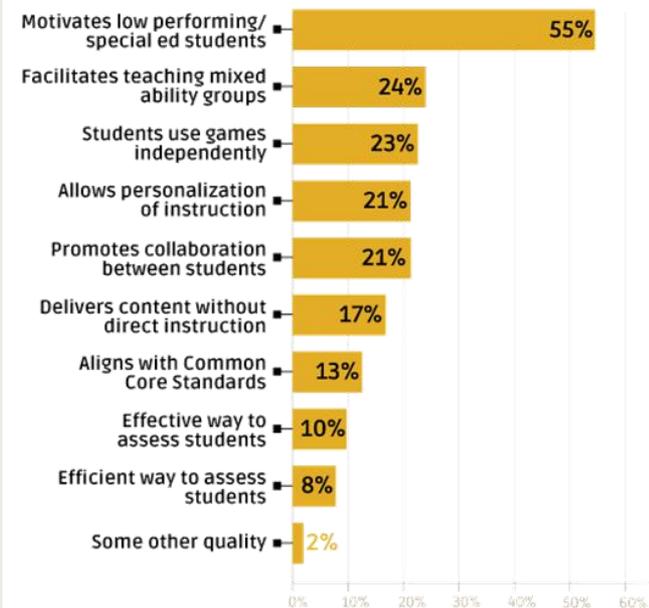
Source: The National Survey of Digital Game Use Among Teachers is a project of the Games and Learning Publishing Council and produced by the Joan Ganz Cooney Center, with support from the Bill and Melinda Gates Foundation. See gamesandlearning.org/URL

Among K-8 teachers who use digital games in teaching (N=513)

Participants were asked to check all that apply

Games Need to Align to Curricula

What qualities of games do you find most valuable?



gamesandlearning.org

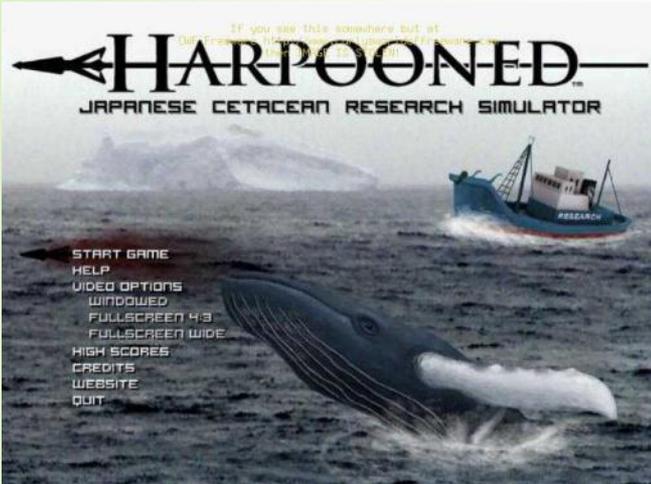
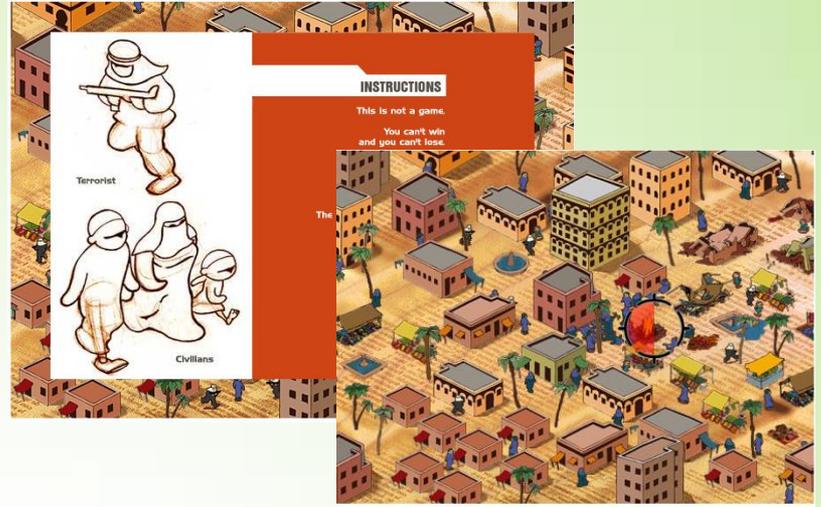
Source: The National Survey of Digital Game Use Among Teachers is a project of the Games and Learning Publishing Council and produced by the Joan Ganz Cooney Center, with support from the Bill and Melinda Gates Foundation. See gamesandlearning.org

Among K-8 teachers who use digital games in teaching (N=513)

Participants were asked to select up to two qualities

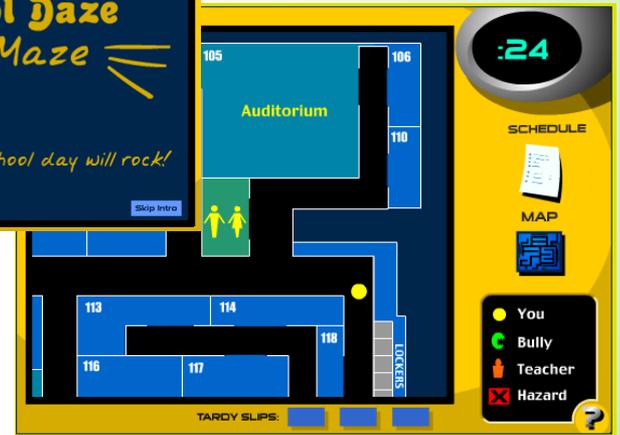
Main Value is Motivational





The Good....





The Bad....

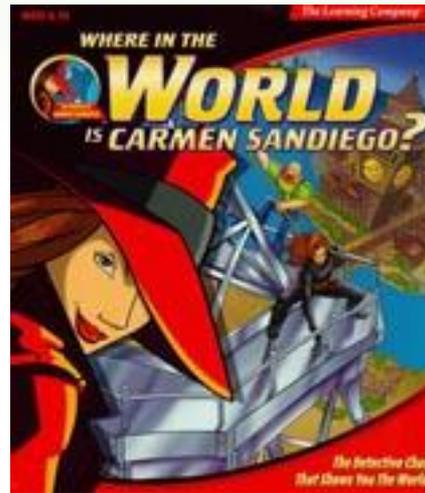
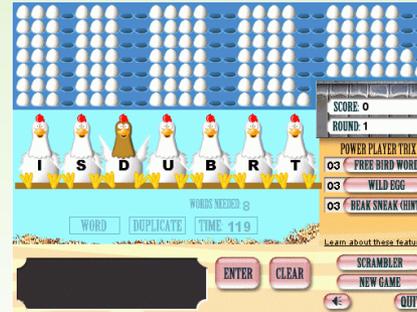




Recipes For Success

Step 3. Putting it all Together

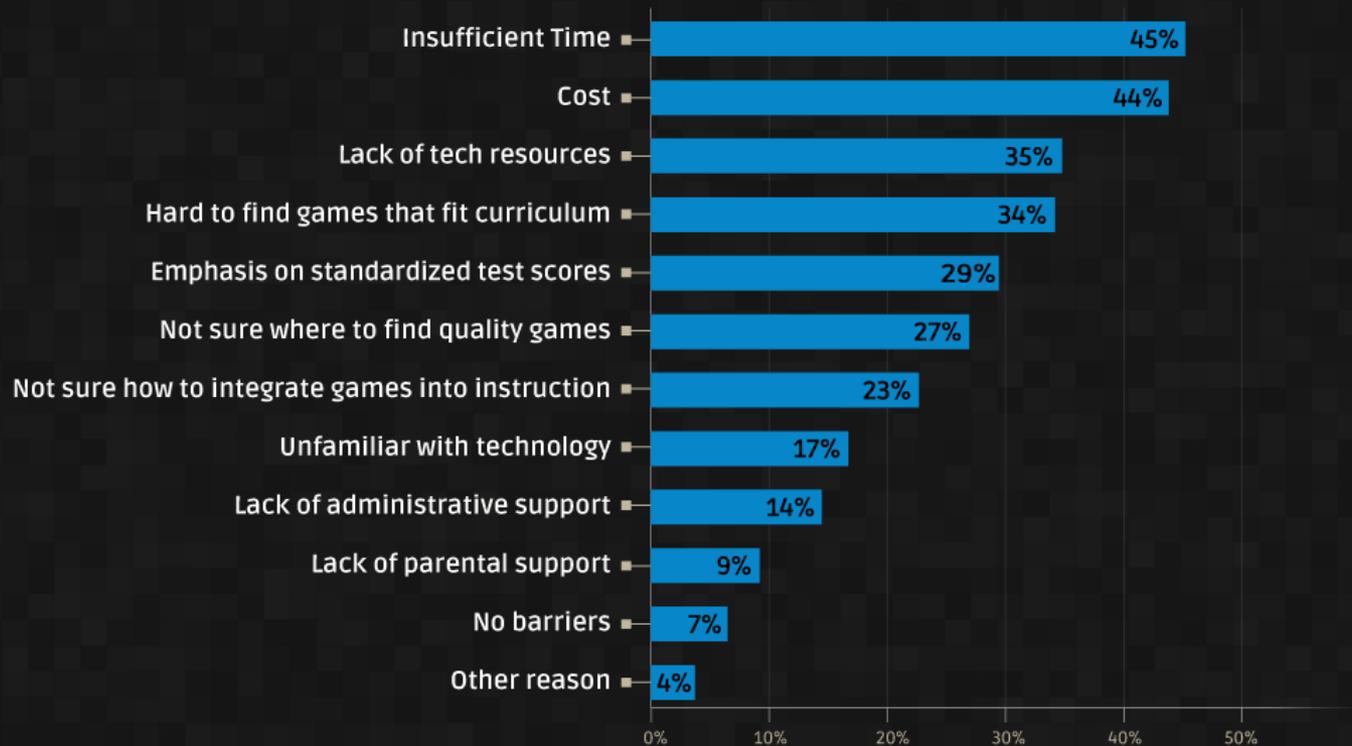




What Makes These Games Good?



What are the greatest barriers teachers face in using digital games in the classroom?



gamesandlearning.org

Source: The National Survey of Digital Game Use Among Teachers is a project of the Games and Learning Publishing Council and produced by the Joan Ganz Cooney Center, with support from the Bill and Melinda Gates Foundation. See gamesandlearning.org/URL

Among K-8 teachers who completed survey (N=694)

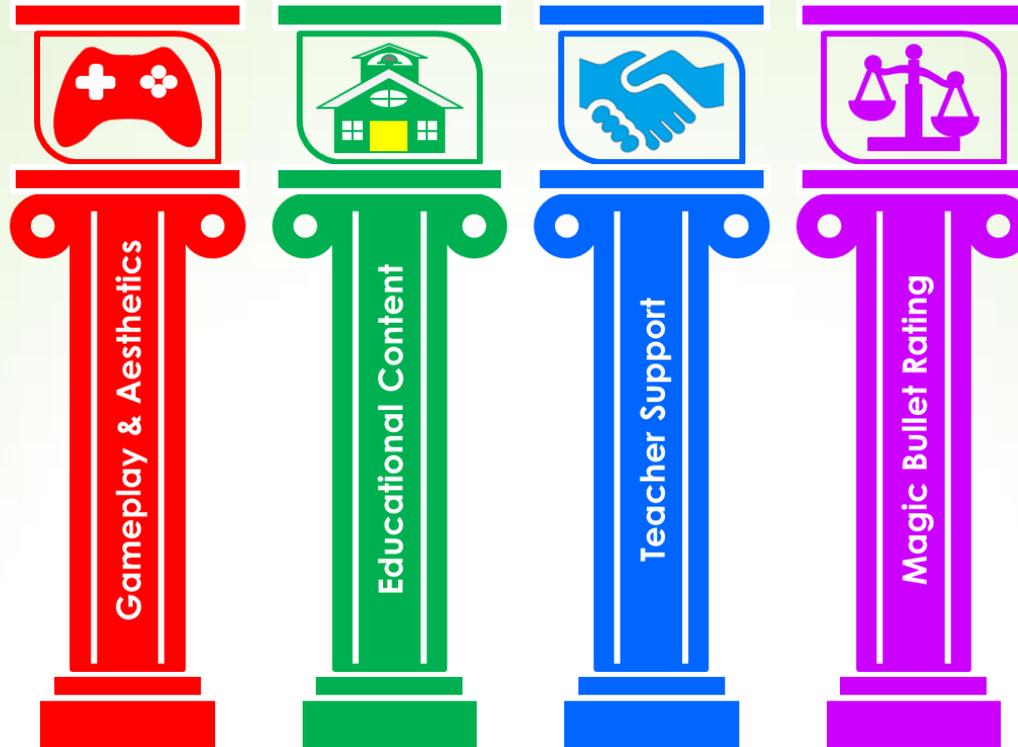
Participants were asked to check all that apply

Remember the Barriers?



4PEG

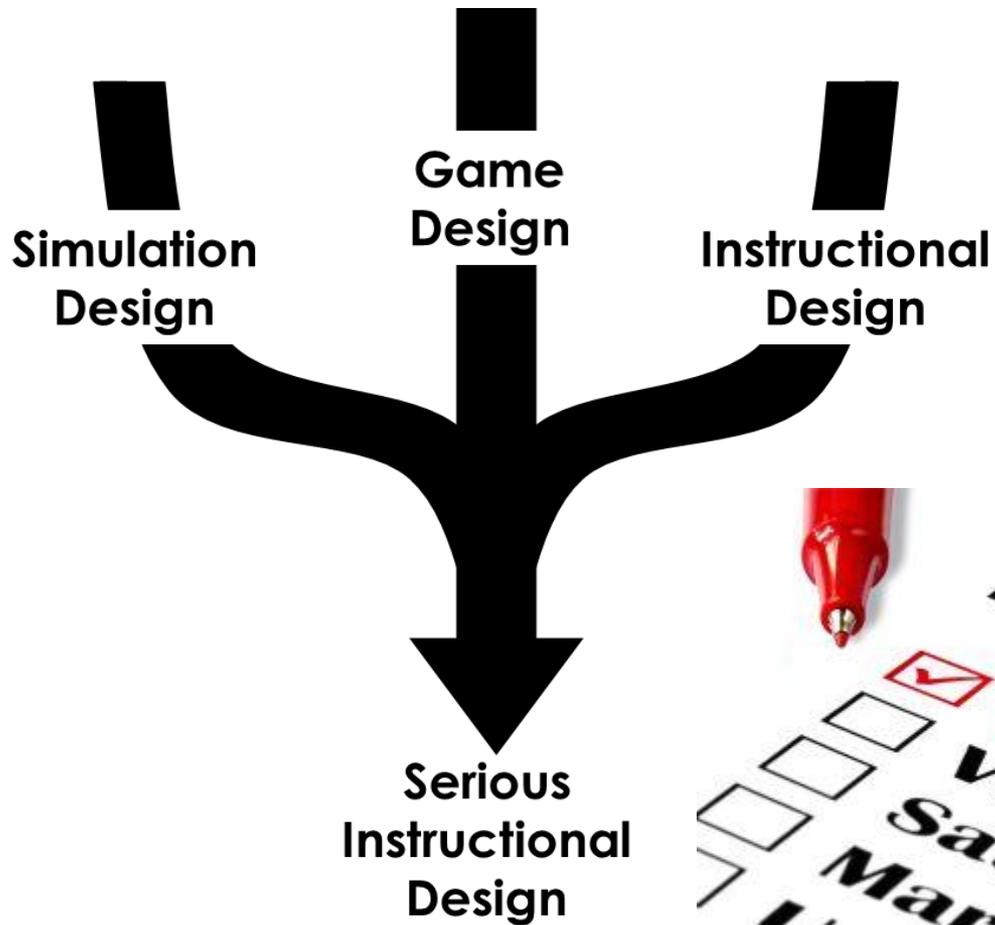
The Four Pillars of Educational Games



A Solution

A Framework for Design & Analysis

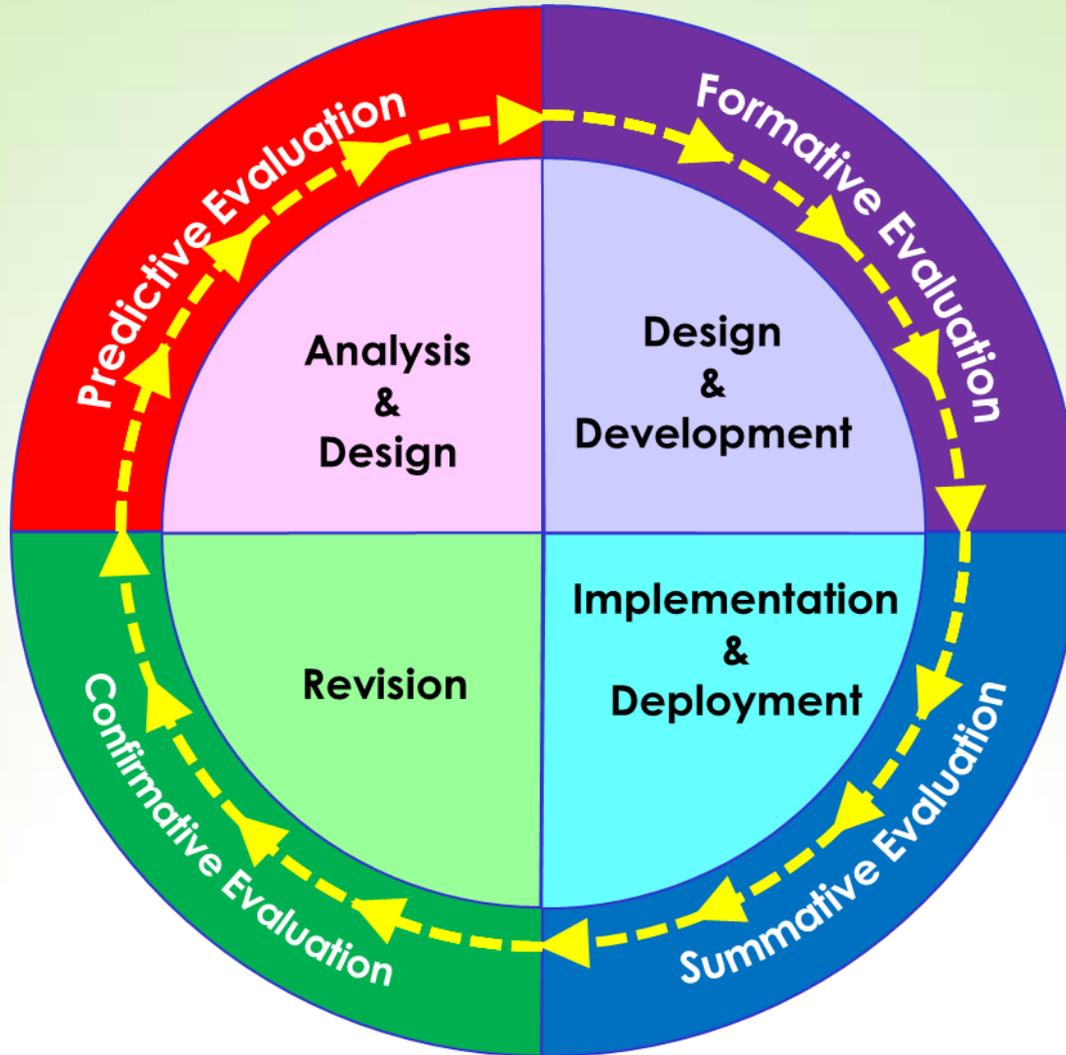




4PEG Framework

<http://minkhollow.ca/MagicBullet/>

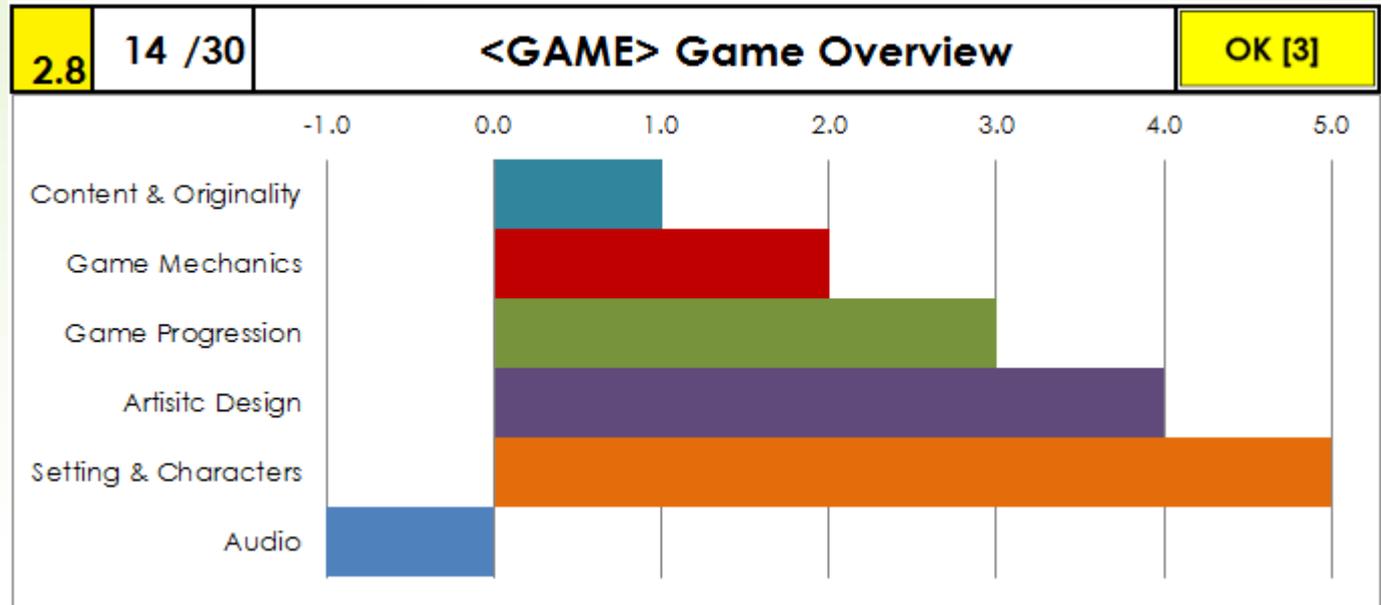




Predictive Evaluation



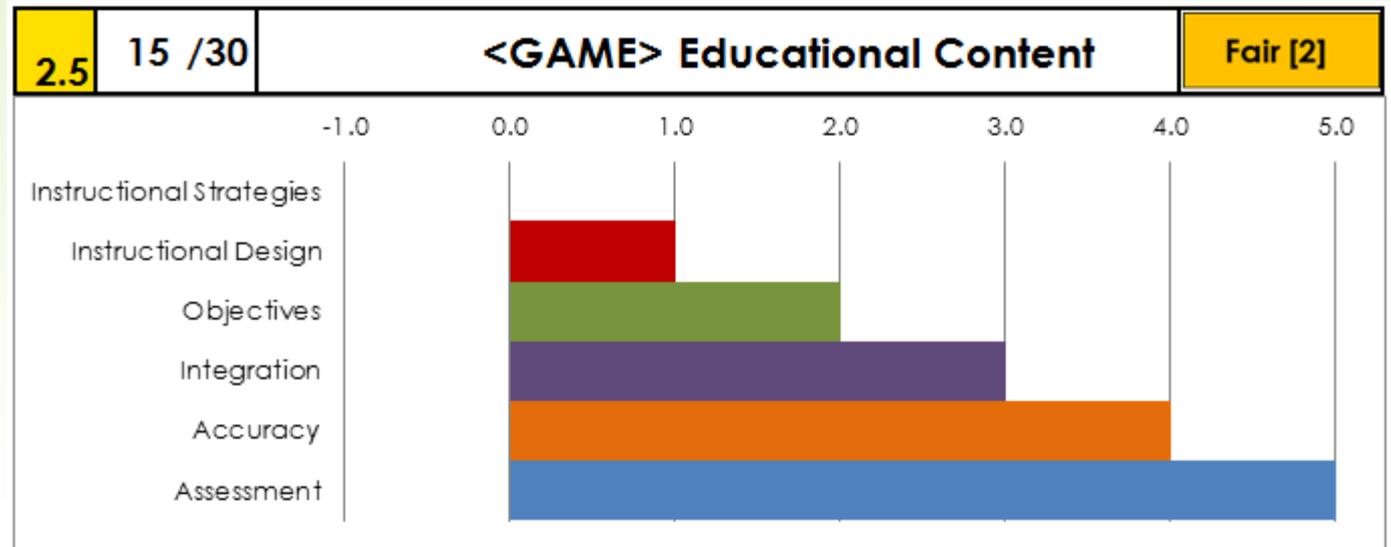
How is it as a game? Is it fun? Is it interesting? How does it measure up esthetically?



Gameplay & Aesthetics



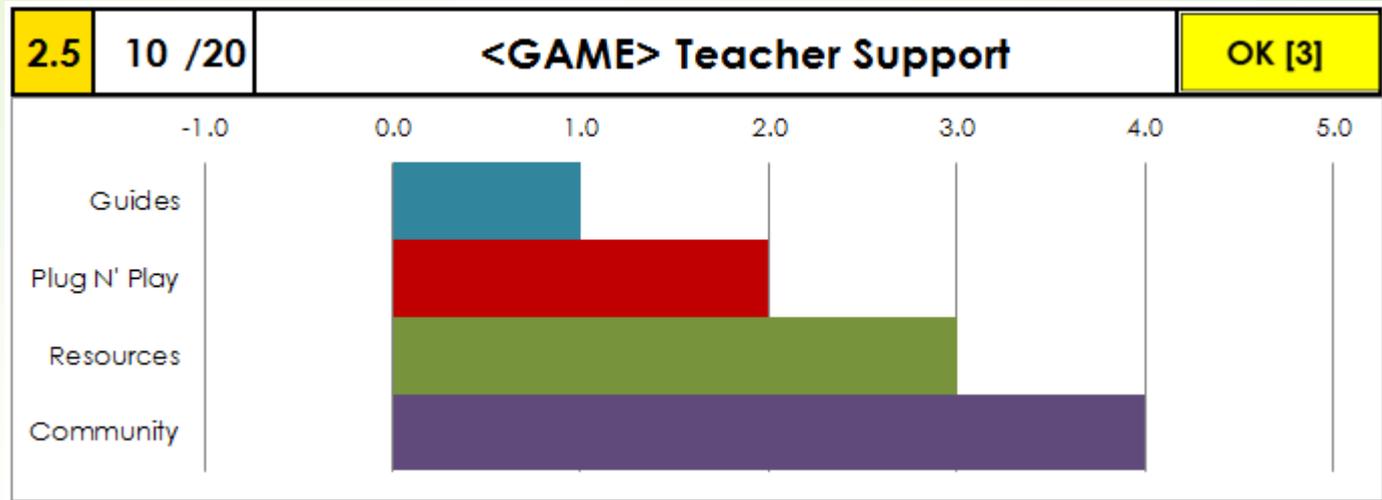
Are there one or more recognizable educational objectives, discernible either from the game itself or from the accompanying support materials.



Educational Content



Is there adequate teacher support to make viable for use in a formal setting?



When you select games to use with your students, what influences your decision?

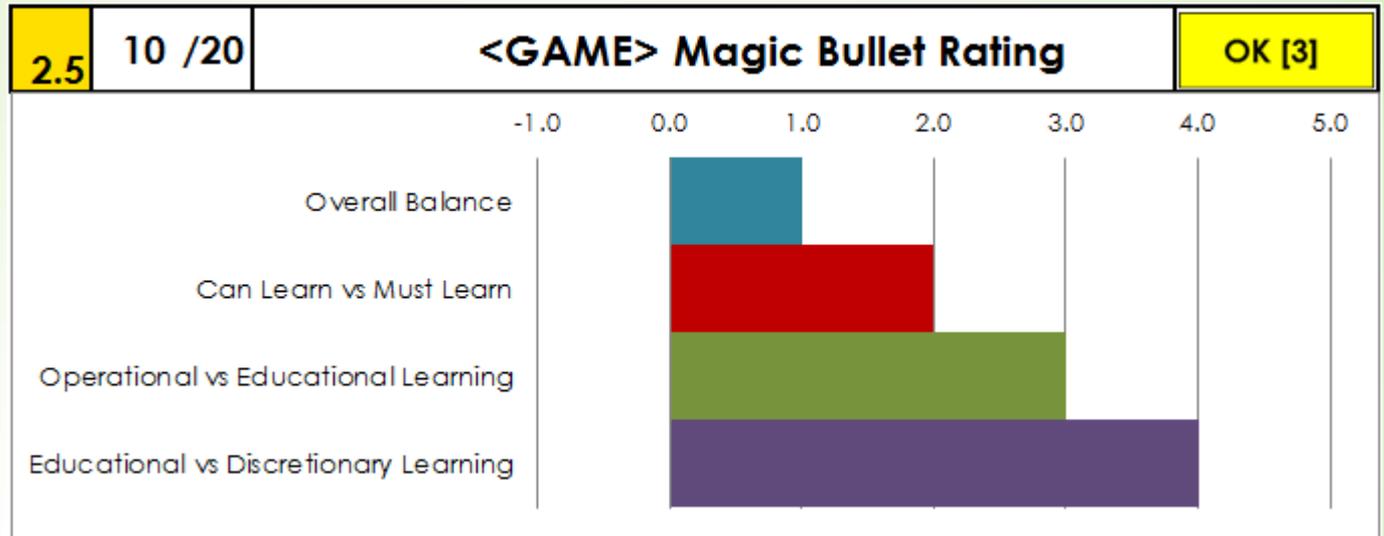
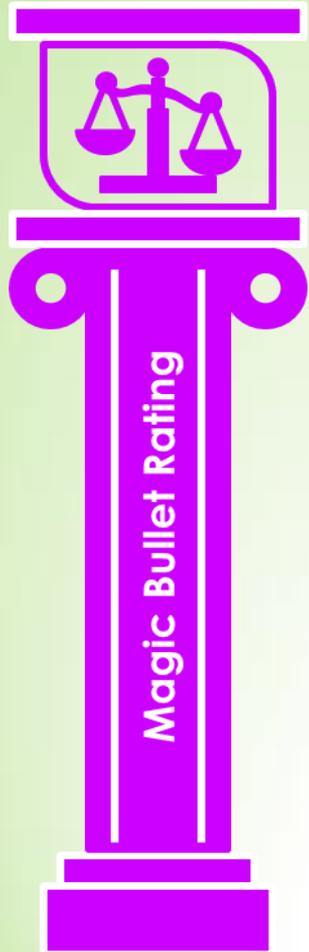


Teacher Support





This section examines the game through the lens of the Magic Bullet model to see how well the various learning elements are balanced.



Magic Bullet Rating



Game Review V5

<GAME>

Fair [2]

OK [3]

Overall Rating **2.5** 49 /100

Summaries

Game Overview	2.8	14	/30	Educational Overview	2.5	35	/70
Gameplay	2.0	6	/15	Teacher Support	2.5	10	/20
Art & Audio	4.0	8	/15	Educational Content	2.5	15	/30
				Magic Bullet Rating	2.5	10	/20

Game Overview	2.8	14	/30	Educational Content	2.5	15	/30
Content & Originality	1	/5		Instructional Strategies	0	/5	
Game Mechanics	2	/5		Instructional Design	1	/5	
Game Progression	3	/5		Objectives	2	/5	
Artistic Design	4	/5		Integration	3	/5	
Setting & Characters	5	/5		Accuracy	4	/5	
Audio	-1	/5		Assessment	5	/5	

Teacher Support	3	10	/20	Magic Bullet Rating	2.5	10	/20
Guides	1	/5		Overall Balance	1	/5	
Plug N' Play	2	/5		Can Learn vs Must Learn	2	/5	
Resources	3	/5		Operational vs Educational Learning	3	/5	
Community	4	/5		Educational vs Discretionary Learning	4	/5	

NOTE: Items marked -1 (na) are not counted





Questions?





Your Turn





Walking Backwards in to the Future: Ensuring the Success of Games for Learning

"Most of us prefer to walk backward into the future, a posture that may be uncomfortable but which at least allows us to keep on looking at familiar things as long as we can." ~ Charles Handy

Formal education moves at geological speeds, and that's lucky for us, because games for learning really aren't ready for prime time, and it's not for the first time. During the 'Edutainment Era' of the late 1980's and early 1990's computer games were proclaimed as the modern solution to all our educational ills. In order to take advantage of this great technology, all we needed to do was wrap a game around a lesson, and it would magically become fun. This, of course, is not true, and the resultant fall from grace left many educational game proponents reeling.

We now have a second chance, and we need to make sure we don't fall into the same trap again. The game evangelists are valuable to be sure, but we need to be realistic, and if we don't have enough games out there that live up to the hype, the idea of using games to teach will once again become a pariah, and the likelihood of a third chance is slim.

This keynote will look at what went wrong last time around, where we are now, and what we need in design, research, and support to make sure that we have it right this time so we are ready when formal education catches up with us.



Ascii Man, Walking:

http://www.janpieter.com/content/046_walking_man_ascii.cfm#content

Reversed: GifMaker <http://gifmaker.me/>

Images, etc.



Edutainment

Shuler, C. (2012). What in the World Happened to Carmen Sandiego? The Edutainment Era: Debunking Myths and Sharing Lessons Learned, The Joan Ganz Cooney Center at Sesame Workshop. October 2, 2012.

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Gredler, M. E. (2004). Games and Simulations and Their Relationships to Learning. In D. H. Jonassen (Ed.), *Handbook of research on educational communications and technology* (2nd ed.). Mahwah, N.J.: Association for Educational Communications and Technology., Lawrence Erlbaum.

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Alessi, S. M., & Trollip, S. R. (1985). *Computer-based instruction : methods and development*. Englewood Cliffs, N.J.: Prentice-Hall.

Alessi, S. M., & Trollip, S. R. (1991). *Computer-based instruction : methods and development* (2nd ed.). Englewood Cliffs, N.J.: Prentice Hall.

Alessi, S. M., & Trollip, S. R. (2001). *Multimedia for learning : methods and development* (3rd ed.). Boston: Allyn and Bacon.

Videogame timeline: http://www.onlineeducation.net/videogame_timeline

Wikipedia history: http://en.wikipedia.org/wiki/History_of_video_games

Spector, J. M. (2014). *Handbook of research on educational communications and technology* (Fourth edition. ed.). New York: Springer.

Handbook of Research For Educational Communications and Technology, Third edition (2007). 928 pages. 978-0-415-96338-1 edited by J. Micheal

Spector, M. David Merrill, Jeroen Van Merrienboer, and Marcy P. Driscoll

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Handbook of Research for Educational Communications and Technology, Second Edition (2004) Edited by David H. Jonassen

Handbook of Research for Educational Communications and Technology, First Edition (1996) Edited by David H. Jonassen

