



Serious Game Play:

An Engagement with Content

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Entertainment Game Play



Serious Game Play



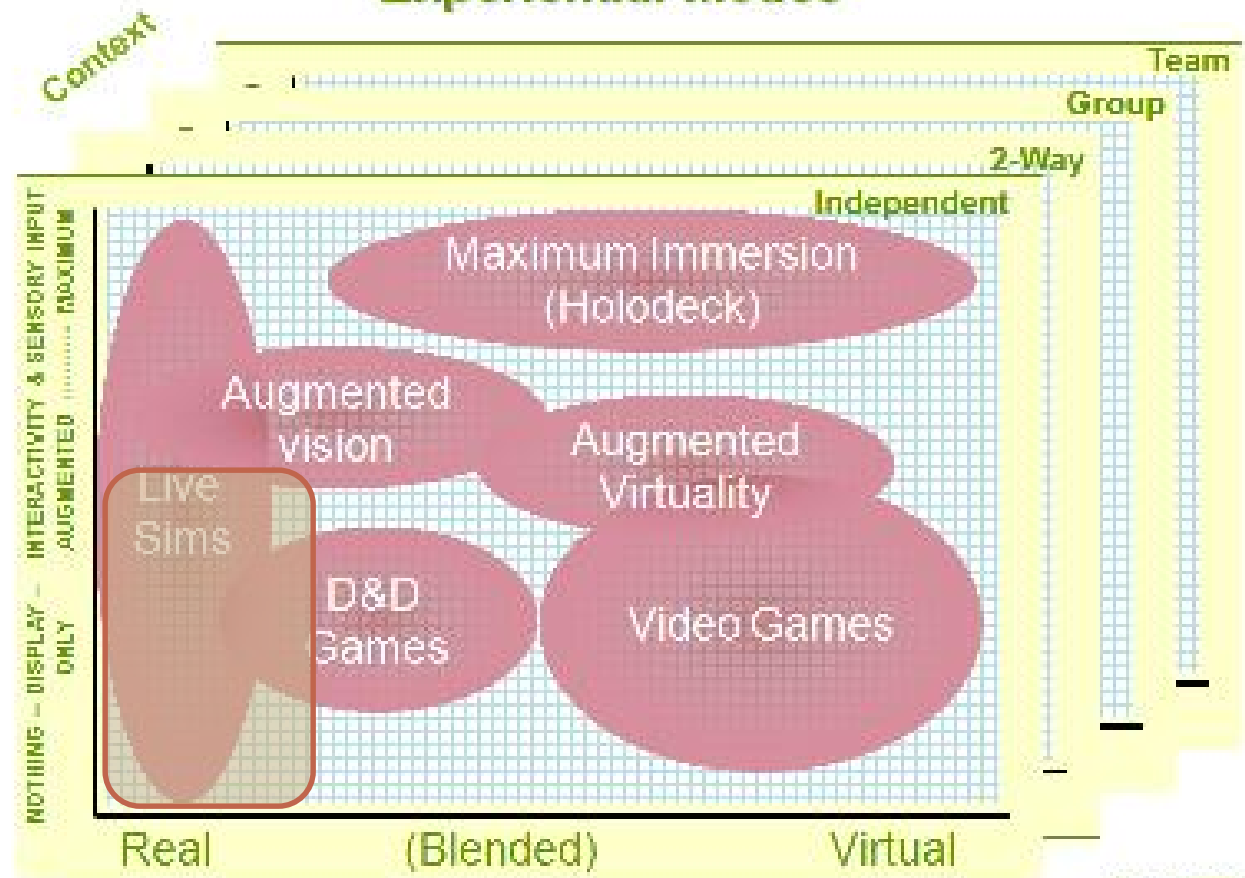
A Brief History

- Dewey, 1938;
- Dale, 1946;
- Abt, 1970;
- Greenblat & Duke, 1975;
- Crawford, 1984;
- Thatcher, 1986;
- Csikszentmihalyi & Csikszentmihalyi, 1988;
- Petranek, 1994;
- Thiagarajan, 1994;
- Savery & Duffy, 1995;
- Appelman & Goldsworthy, 1999;
- Salen & Zimmerman, 2004; First Serious Games Summit - 2004
- Appelman & Wilson, 2006;

The Game/Sim as a Tool

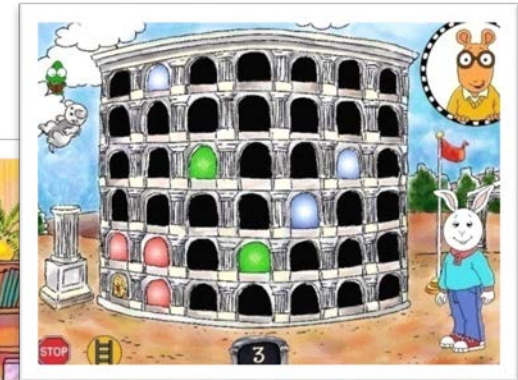
- A Wide Range of Experiences Available for Learners

Experiential Modes



Experiential Examples

- Quizzes
- Puzzles
- Practice
- Problem Solving

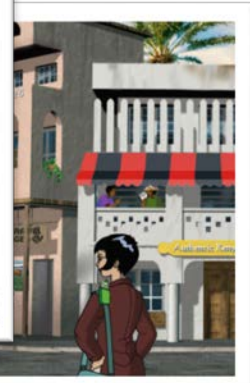


World Wiz Database

Countries			Continents	
Afghanistan	Guatemala	Pakistan	Africa	North America
Argentina	Hungary	Panama	Antarctica	Oceania/Australia
Australia	Iceland	Peru	Asia	South America
Austria	India	Philippines	Europe	
Bolivia	Indonesia	Russia		
Brazil	Iran	Singapore		
Cambodia	Israel	South Africa		
Canada	Italy	South Korea		
Chile	Japan	Spain		
China	Jordan	Sweden		
Cuba	Kenya	Tanzania		
Dem. Rep. Congo	Mexico	Thailand		
Denmark	Morocco	Turkey		
Egypt	Nepal	United Kingdom		
France	Netherlands	United States		
Germany	New Zealand	Vietnam		
Greece	Nigeria			

ACME Tools

Talking Translator	Glossary
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Show Immersive Examples

- MoH Trng
- Halo Beginning (HCl)
- Halo Fun with weapons

Engagement w/ Content = Learning

- Mark Prensky (et all gamers)
 - Instructional Designers KILL games when they become involved, and the games aren't FUN any more!
- **Serious Games differ by Intent**
 - have specific learning outcomes
 - involve a higher content density
 - have authentic content
 - involve players who are engaged to learn

Serious Content

- Density inside/outside
 - There will be **more** of it
 - **Manipulation of Content** within the game
 - or for a SIM, **Reflection on Decisions** is key
 - The content may be accessed **inside or outside** of game play
- Authenticity of TARGET Content
 - It will have **real-world application**
 - Target Content will be **true to real-world action**

Serious Outcomes

- There is an expectation that people will be **different** after the game play experience
- The player will poses new/different:
 - **Concepts**
 - **Skills**
 - **Attitudes**
 - **Beliefs**

Serious Players

- Context: Class or Recess?
- Player Demographics Pre-Game Play:
 - Experience
 - Skill
 - Strategies
- Player motivation to achieve goal
 - Personal, Social, Contextual
 - achieving Entertainment goals [and/or]
 - achieving Serious goals

Engagement / Fun

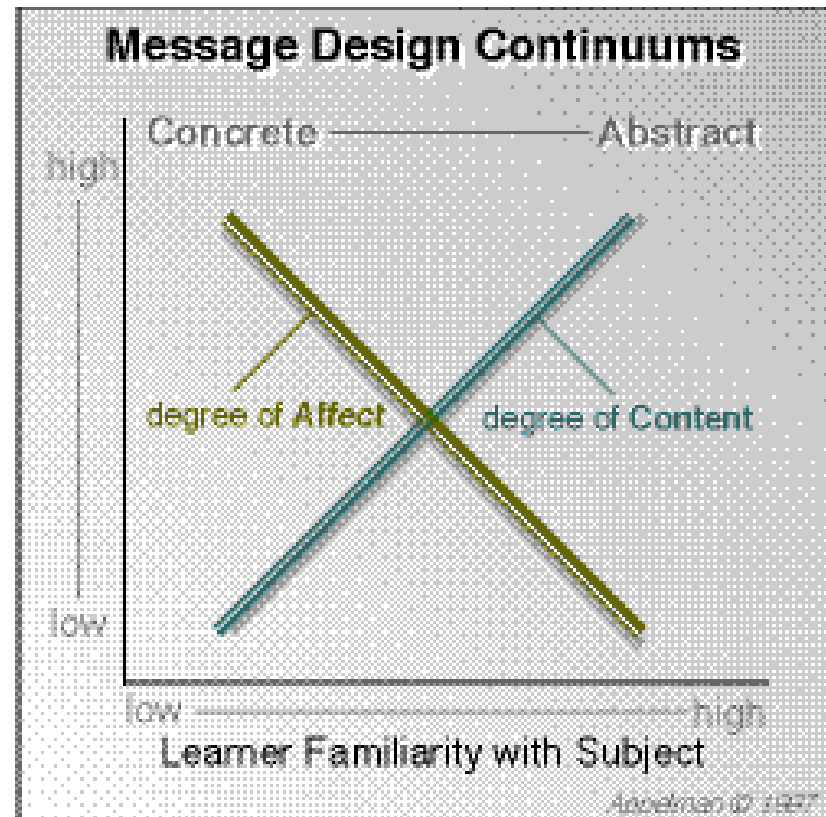
- ... with what & why?
- In Traditional Teaching:
Engagement with Content is Primary
- In Entertainment Games:
Engagement with Tasks are Primary
- To a Professional Educator:
Learning is Predictable
- To a Professional Game Developer:
Fun is Predictable

Serious Game Design

- The Context and Needs determine objectives
- The Learning Objectives need to be stated
- The Player Motivation needs to be defined
- The Ideal Learning Environment for this context, objectives, and desired outcomes must be defined
- The Learning Environment must dictate % game play and % authentic simulation

Affective/Cognitive Balance

- Affective presentation (game) effective when content knowledge is low and content density is also low.
- As content knowledge goes up then content density may rise but authenticity and functionality (Sim) must also rise.



Content in Games EXAMPLES

- Age of Empires
- Timeline
- Tactical Arabic Training

The Player Experience

1. **Cognition** –changes in cognitive and affective domains
2. **Metacognition** –all that the player is aware of including:
vision, audio, olfactory, kinesthetic, and haptic senses,
plus an awareness of time, objects, & content
3. **Choice** – perception of:
degree of control, and access to
variables and information during game play
4. **Action** – perception that they can do things such as:
interact with objects and elements within the game,
have control of objects, elements, and own identity,
have mobility to move through the environment,
manipulate control interface to effect change.

Game Structure

1. **Content** –

the story, the context, the amount of information available, the degree of concreteness or abstraction of the content, the authenticity, and its variability

2. **Environment** –

the virtual spaces and boundaries, the objects within these spaces and their functionality capabilities, plus any time limits imposed by the game

3. **Affordances** –

the abilities made for the player to change, manipulate, the objects, information, environment, their identity & capabilities, and/or to seek alternative information

Experiential Mode Triage



Gamers

- Not bothered by failier
- Will make any environment “work”
- Will use Trial and Error strategies
- Geared for Experiential Learning
- Will need some conditioning to be serious
 - ...but are sensitive to reinforcement

Serious Game Play



Engaged Game Play





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