Game and Learn:
An Introduction to Educational Gaming
6. Critical Gaming

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Parcelling Out The Terrain

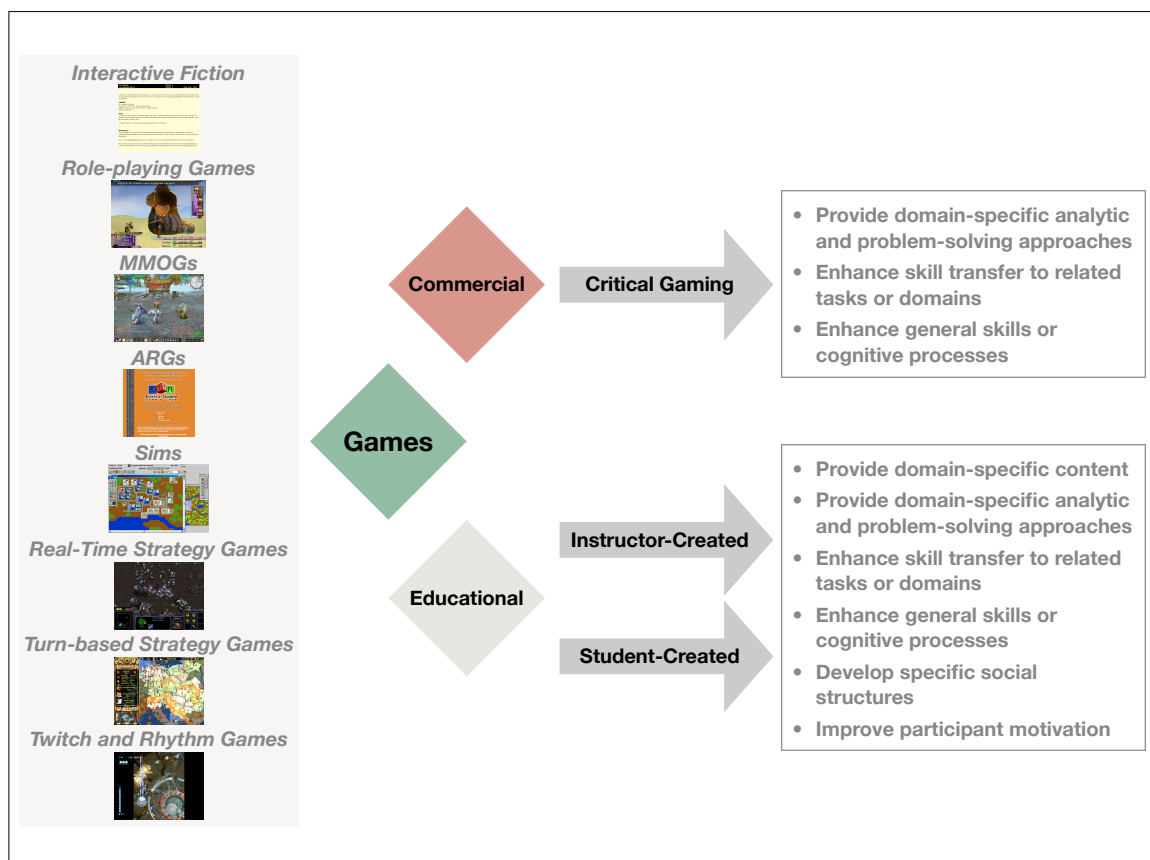## Why are you using a game?

- Do you want to:

    - Provide domain-specific content?

    - Provide domain-specific analytic and problem-solving approaches?

    - Enhance skill transfer to related tasks or domains?

    - Enhance general skills or cognitive processes?

    - Develop specific social structures?

    - Improve participant motivation?

Commercial games answer…

- If you want to:
    - Provide domain-specific content
        - Weak – few commercial games are solid in this regard
    - Provide domain-specific analytic and problem-solving approaches
        - OK – critical gaming is essential here
    - Enhance skill transfer to related tasks or domains
        - OK to Strong – will generally involve secondary aspects of game, task/domain
    - Enhance general skills or cognitive processes
        - OK to Strong – need careful research
    - Develop specific social structures
        - Weak – structures tend not to map usefully from game to course needs
    - Improve participant motivation
        - Weak to OK – relevance, effectiveness need to be gauged carefully

Particularly Interesting Categories

- Interactive Fiction
  - Narrative structure analysis
- Role-playing Games
  - Dramatic structures, narrative building support, derived media creation
- MMOGs
  - Narrative building support, derived media creation, Social Sciences research
- ARGs
  - Narrative building support, media literacy
- Sims
  - Systems modeling, statistical analysis, research methodologies
- Real-Time Strategy Games
  - Modeling, decision optimization
- Turn-based World Strategy Games
  - Historical assumptions and causality analysis
- Twitch Games
  - Dexterity skills, spatial perception

Interactive Fiction

Role-playing Games

MMOGs

ARGs

Sims

Real-Time Strategy Games

Turn-based Strategy Games

Twitch and Rhythm Games

Games

Commercial → **Critical Gaming** →
- Provide domain-specific analytic and problem-solving approaches
- Enhance skill transfer to related tasks or domains
- Enhance general skills or cognitive processes

Educational

Instructor-Created →
Student-Created →
- Provide domain-specific content
- Provide domain-specific analytic and problem-solving approaches
- Enhance skill transfer to related tasks or domains
- Enhance general skills or cognitive processes
- Develop specific social structures
- Improve participant motivation

The Approach

Four Questions

1. Why are you doing what you're doing to beat the game?

2. What aspects of the game lead you to that approach?

3. Where are you taking risks, and where are you playing it safe?

4. What skills do you need to develop to get better at this game?

Key Elements of Critical Gaming

- Establish what the game is attempting to represent

- Establish how it's doing it

- Determine its successes

- Determine its shortcomings and their sources:

  - Technical limits

  - Game fun limits

  - Conceptual limits

- Propose remedies for the shortcomings

- Propose ways to further investigate the game

Two Examples

Portal: The Flash Version
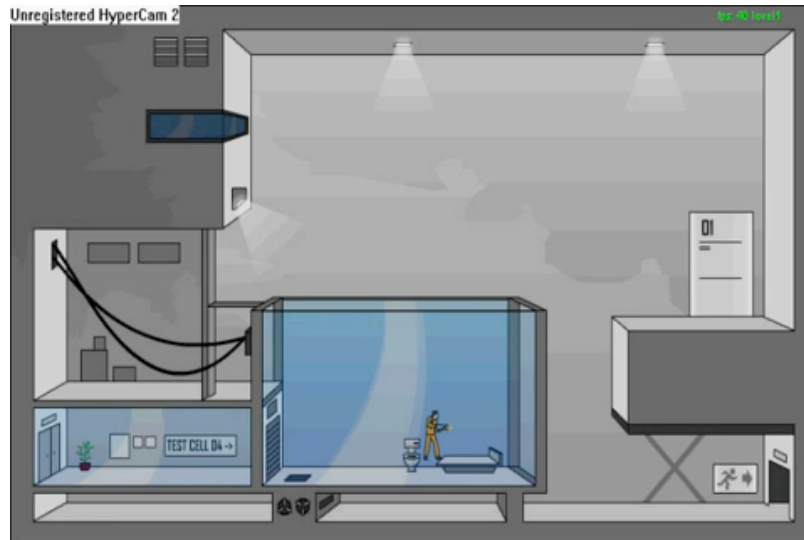
Micropolis
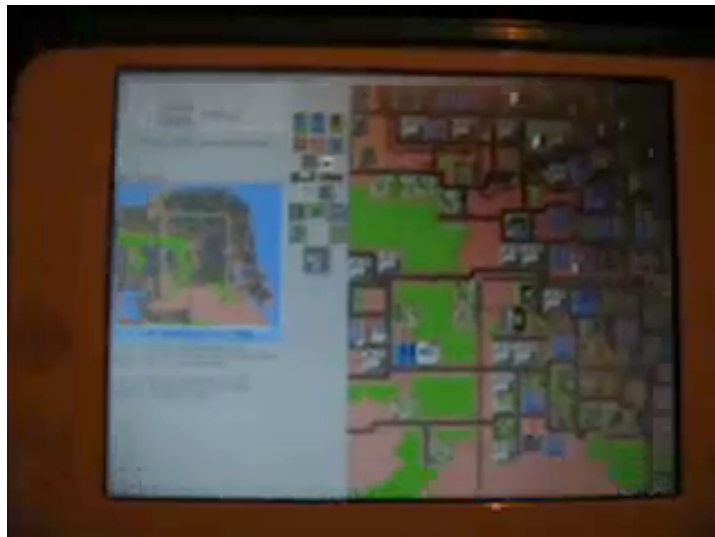
Resources Cited

- **Critical Gaming:**
  - R. Puentedura, "I Taught It, Bought It at the Game Store: Repurposing Commercial Games for Education". *NMC Summer Conference Proceedings*. (2007) Online at:
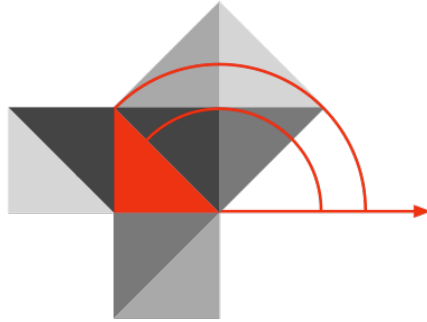   http://www.nmc.org/publications/2007-conference-proceedings

- **Game Sources:**
  - *Portal: The Flash Version*: http://portal.wecreatestuff.com/
  - *Micropolis*: http://www.micropolisonline.com/

- **Game Videos:**
  - *Portal: The Flash Version*:
    http://www.youtube.com/watch?v=PBZCG3hWy-c
  - *Micropolis*:
    http://www.youtube.com/watch?v=EpKhh10K-j0

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