

Simulations:

The reality and the challenges

Emergent Learning Forum,
April 26, 2004

Richard Clark, NextQuestion

Why simulations?

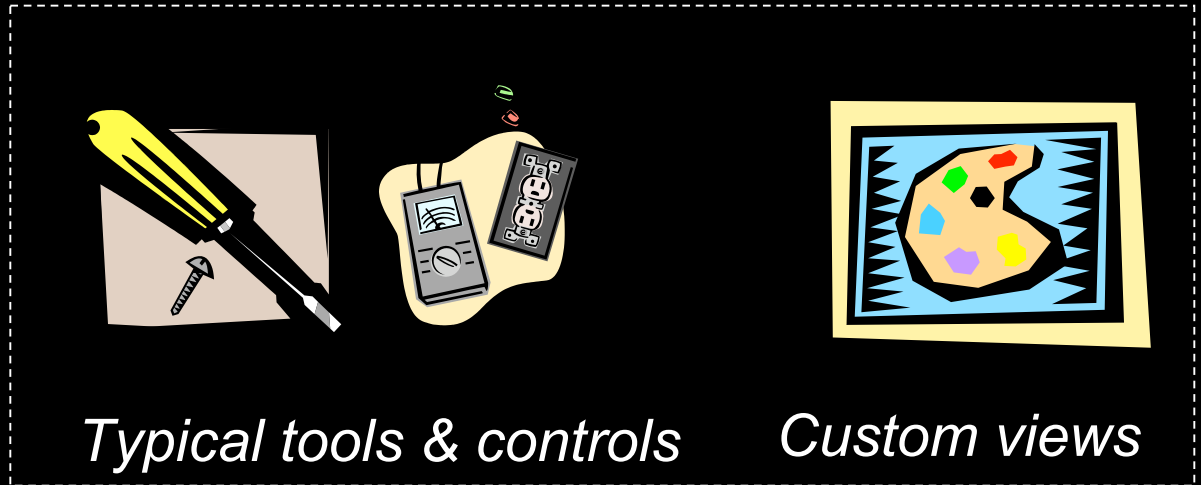
- “You learn everything twice...”
- Expertise = context & connections

What is a simulation?

- *“A representation of the objects, characteristics, behaviors, and relationships of one system through the use of another system” - Thiago*

Inside a simulation

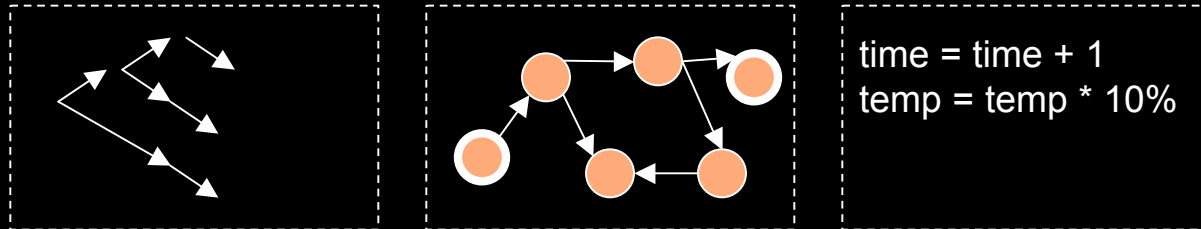
User interface



The 'User interface' section is enclosed in a dashed white border. It contains two main areas. On the left, under the heading 'Typical tools & controls', there are three icons: a yellow-handled screwdriver, a grey multimeter, and a yellow handheld device with a screen and buttons. On the right, under the heading 'Custom views', there is a framed image of a colorful, abstract shape resembling a brain or a complex object, with various colored spots (red, green, blue, yellow, purple) on a light blue background.

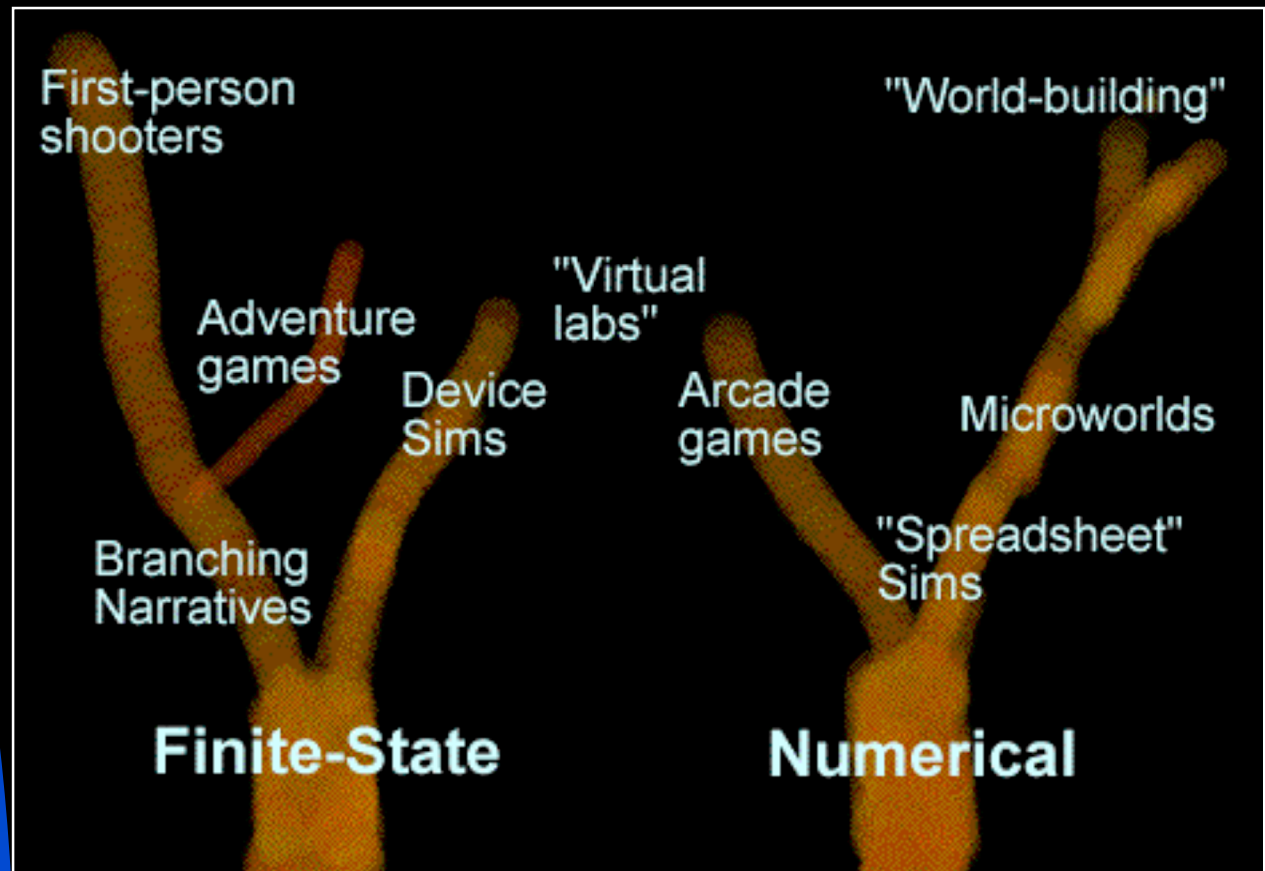
Instructional strategies / scenarios

Model



The 'Model' section is enclosed in a dashed white border and contains three distinct elements. On the left is a flowchart with a central node and several arrows pointing outwards in different directions. In the middle is a state transition diagram with five orange circular nodes connected by arrows in a circular path. On the right is a code block containing two lines of text: $time = time + 1$ and $temp = temp * 10\%$.

A family tree



Today's agenda

■ Presentations

- ◆ Setting the stage
Richard Clark, NextQuestion
- ◆ Simulations for Biomanufacturing
John Hathaway, GeneEd
- ◆ Evaluating learning via simulations
Jonathan Kaye, Amethyst Interactive
- ◆ “The *Play*’s the Thing...”
Clark Quinn:
- ◆ Multiplayer online gaming
Jim Schulyer, Red 7

■ Demo fair

What to watch for...

- How do these simulations...
 - ◆ Engage?
 - ◆ Support trial and error learning?
 - ◆ Create context?
 - ◆ Take advantage of teachable moments?
- Implications for development?
- How would you build one?