

2 Types of Causal Reasoning

PREDICTION

a.k.a. HYPOTHESES

known conditions → possible effects

INFERENCE

a.k.a. DIAGNOSIS

effect → determine cause

TECH TOOLS

4 EXPERIMENTATION

microworlds

Constrained spaces for real word problems with manipulable objects

simulations

Apply to broad set of systems

Games

meaningfulness based on nature of requirements

virtual worlds

realistic, 3D worlds where users are avatars

MAJOR QUESTION

How do I apply this in my high school English classroom?

- Predictions could be used for interrupted reading of stories
- Character inferences
- Argument and proposal papers
- Virtual worlds could help students practice interviewing
 - Hypothesize how tone is influenced by diction, details, imagery, etc.
 - Infer an author's perspective or beliefs
- Virtual avatars to represent novel characters and how they would interact in the real world
- Jeopardy-like quiz games that require higher level answers.
- Predict a story based on the title or cover.

3 Warnings

- Identity
- New Communication Patterns
- New Pedagogic Rules

3 DESIGN PRINCIPLES

3

ITERATIVE

MEMORABLE CONTEXTS

speculate

explore

test

5 Ways to Experiment

hypothesize

conjecture

MINOR QUESTION:

Is Angry Birds a physics microworld?

6

Design Tools



Design Compass

This program helps students keep track of the different strategies they use as they design.



Musical Sketch Pad

Younger students can make music with ease!



AgentSheets

Make simulations to practice logical



iStopMotion

With this program, any student or teacher could make a stop motion video.



Scratch

Teaches computer programming skills while students edit, chop, and splice video and audio..



GarageBand

Apple's classic music composition program.