For conveners

Research on Learning Conference

Wingspread July 2002

Computer-based technology

- Done equally well without computing (web page)
- Better with computing (3-D visualization -??)
- Only possible with computing (Biosphere 3-D)

How do I know if students have learned better or differently? (virtual ??)

- Ability to manipulate makes it easier to interpret
- Today's students play these kind of games
- Saliency – students can be shown what's salient and learn about goals –
- scaffolding

(Rick Lowe, Larken and Simon, 1987, Cognitive Science Perry Thorndike, 1978 Head, Topographic Maps)

Expertise and novices

        ???? in building for architects

Barriers-change parameters to simulate nature

- directed discovery
- don't want students to be buried by programs
- creativity
- need environments that are adaptive, but not too open-ended

Interactive quizzing –web CT, blackboard, e-college

- get immediate feedback
- what is effectiveness?

Do new technologies allow us to design new learning environments?

Use and customize only if you need to

??? process in design

Begin with good foundational questions

Identify the good projects

- Rock cycle project at Yale
- Geo 3-D
- Wise curriculum by Janice Gobert
- Salol – material to use in crystals, etc. (physical material)
- Danny Edelson's ?? stuff

Replacements vs enhancement

- What is value added?
- How does it open the door to learning?

Approach ways to integrate technology

- Bridging activities
- Concrete manipulative's
- Directly experience ???

Why need computer labs and field work>

Goals of computer vs field trips, etc. – may be complimentary

may not integrate

How can technology improve or augment learning in other settings? Synergy

Need to have curriculum with time

"nothing works the first time"

Making corrections in "N" dimensions

?? in scale

digital library

How do different types of students learn from data?

Should students collect some date to understand the connection with reality?