

Final Session

Research on Learning

July 2002

(from Cathy's notes)

Recommendation for

1. Dissemination
2. Professional development
3. Research Plan implementation

1. Policy document ??? by professional societies

Purpose: elevate ability to do research on learning in geoscience enable funding

2. Sustain and build collaborations via meeting venues, site visits, joint projects, nSF programs, collaborative grants, overseas collaboration, regional CILT model Seed grants (\$5k)
3. Build researchers doing learning in geoscience community
 - o Recruit friendly with ops
 - o Early-career science researchers – need opportunities and networking, focus on early career in both geo and learning science
4. Science of Learning Center
5. Action research on own teaching of other suitable professional development. CCLI to look at learning environment.
6. Disseminate information on research on learning into geological literature in context that is accessible and across DER

Research directions

What is the state of prior knowledge and how does it interact with teaching?

A .expert cognition in the geosciences

1. spatial processing –multiple dimensions of expertise lifelong decision-making Image??
2. characterization/categorization of

a)representations

b)real-world formations

B. learning/becoming an expert

1. students' conceptions of geologic time
 - a)effects of instruction
 - b)continued (learning)
2. How and when to introduce different images/representations
3. assessment of cognitive/conceptual skills

a)“stages” of learning

b)“test” development

c) learning environments

relationship to everyday life

longitudinal studies

integration of other learning settings