Learning Science within a Community of Scientific Practice

Habits of Mind + Scientific Inquiry (QPOE²) + Socially and Language Rich Environment = Improved Learning of Science

Habits of Mind:
- Curiosity
- Openness to New Ideas/Informed Skepticism
- Creative Thinking
- Critical Thinking
- Persistence
- Adaptability
- Self-direction
- Integrity

A Process of
Scientific Inquiry (QPOE²)

Question
- Application
- Explanation
- Data Analysis

Observation
- Evaluation

Prediction
- Knowledge Probe
- Investigation Plan

Socially and Language Rich Environment:
- Mental Stimulation
- A Culture Supporting Risk Taking
- Collaborative Structures
  - Individual
  - Small Group
  - Whole Group
- Cooperative Interactions
- Shared Control
  - Teacher-directed
  - Student-directed
- Negotiated Meaning
- Discourse:
  - Oral and Written

Van Andel Education Institute
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Thinking and Acting Like Scientists: Students | Teachers | Community