Investigating Teachers’ Attitudes Towards Science
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PRE-SERVICE ELEMENTARY TEACHERS
During the 8+ years that we have been working with pre-service teachers it has been evident to us that student background and attitudes have a huge impact on student learning, enthusiasm for science, and classroom atmosphere.

AVENUES TO ADDRESS ATTITUDES
• “Ice breaker” activities that illustrate science process (“Do You Know Me”)
• High success rate activities: Earth Observation Day, Investigation of Hominid Skull Physiology, Case Studies
• Highly personal instructors!

DATA – Directed Reflective Writing
• Initial Essays:
  • Describe your learning expectations for this class.
  • Describe what you know about how you learn.
  • What knowledge of <subject area> do you bring to this class?
• Portfolio Essays:
  • Questions address previous ideas, how students learned content, remaining questions and confidence levels.

DATA – Survey
• Early attempts at surveying changes in attitudes
• Need a better instrument and more study

SCIENCE WORKSHOPS FOR IN-SERVICE TEACHERS
For the last 2 summers the Science Education Institute of the Southwest (SEIS) has offered 1-week workshops for in-service science teachers. Our research questions are focused on evaluating changes in content knowledge, science process skills and attitudes towards science.

Looking at the Affective Domain Using Reflective Writing
In the summer of 2006 we investigated changes in attitudes and comfort levels with doing science in the field using reflective writing.

Example Questions:
When did you feel well-prepared and/or competent? Why?
When did you feel uncomfortable and/or unprepared? Why?

Example Responses:
“Everything was a major learning curve... I’d never done anything like it before.”
It was “....embarrassing not having “official” hiking gear.”
“I wasn’t into science until I took these courses, I CAN DO IT!”

DATA – STEBI
We are using the Science Teaching Efficacy Belief Instrument (Enoch and Riggs, 1990) to measure self-efficacy, and therefore one aspect of the affective domain. We have just started collecting and analyzing data. The graphs show some very preliminary results from a small sample size.

VERY BRIEF DISCUSSION
In-service teachers from this very small sample have high self-efficacy with regard to these two questions. These teachers already have high content knowledge and confidence in teaching science.