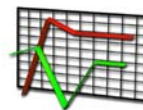# Sharing Evaluation Information Across Programs: Providing a Larger Picture of Some of the Issues and Challenges Stakeholders Face

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Supporting Data-driven Decisions™

Where this Idea Came from

- Idea came about organically
- Saw a similar pattern in each of the data sets of two clients
- I thought this pattern relevant to both clients
- Caveat: This is a work in progress and questions about ultimate use or value to the client are still largely unanswered

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Background

Two current clients:

- Each is an Informal Science Institution (ISI) that offers a program that supplements science education efforts

Background (con't.)

Each program has similar goals relative to their target audience in teaching science:

- Build confidence
- Improve competence
- Encourage use of resources unique to ISIs

Background (con't.)

- Asked permission to share information by approaching each client separately
- Showed their data alongside data from the other ISI (at the aggregate level)

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Background (con't.)

- Identity of other institution revealed to each after the approval from both
- But I elected to mask their identity for the purposes of this presentation

Two Programs: Briefly Described

Who:
Pre-service teachers, i.e., Undergraduate elementary education majors

What:
2 courses in environmental science (one in content and one in methods)

When:
Offered during the summer

Who:
In-service teachers from a large urban public school district

What:
Variety of professional development opportunities

When:
Offered during the summer and the school year

Attitudes toward Teaching Science

Four out of the five attitude scales used were common across both programs:

- Reluctance to Use Traditional Methods
- Confidence in Teaching
- Inquiry-based Science
- Instructional Strategies
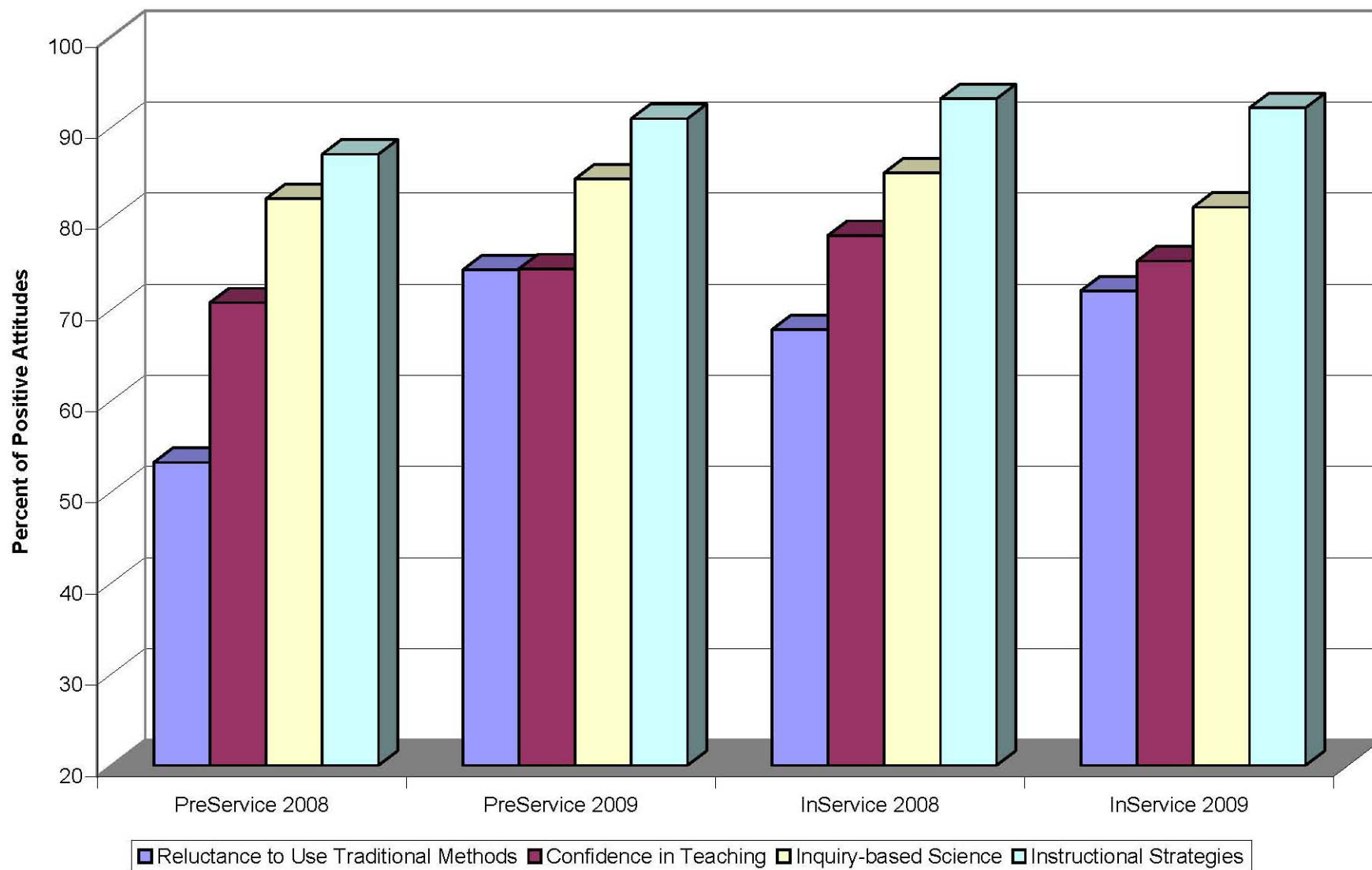
Attitudes toward Teaching Science (con.'t)

For ALL scales:

■ The higher the score the more positive the attitude

■ Scales were converted to percents in order to make comparisons possible

■ Data available for two program years

■ Differences in sample size were evident

Table 1. Data Summary by Program and Year

Target Audience	2008	2009	Total
Pre-service teachers	34	32	63
In-service teachers	29	134	166

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Figure 1. Attitudes toward Teaching Science: Pre-Service and In-Service Teachers

What do these Data Show:

- For each program, most positive attitudes were evident for Instructional Strategies, followed by Inquiry-based Science, Confidence, and Reluctance to Use Traditional Methods
- For each program, there were significant differences across scales

What do these Data Show (con't):

■ Only scores from the Instructional Strategies scale were significantly different for the two target audiences (more positive attitudes for in-service compared to pre-service teachers)

■ No significant differences across program years

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What do these Data Suggest:

- May represent a tendency

or habit that is modeled or formed from what pre-service and/or in-service teachers frequently experience

- Thus, maybe not systemic but certainly repetitive

- Suggest a pattern that may be highly resistant to change

What do these Data Suggest (con't):

- ■ Participating ISIs may find these results more meaningful because these are based on data from their own target audience

- ■ Reflect a larger picture that ISIs face in STEM reform education programs

What do these Data Suggest (con't):

- May underscore the difficulties of changing or building positive attitudes toward teaching science especially in the short-term
- Data not without limitations (e.g., self-selection of the target audiences)

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Use of Data:

- It remains to be determined how and in what ways clients will react to these data and

- In what ways (if any) these data are used by clients

- I will use data to underscore the challenges each program faces in attempts to modify these attitudes
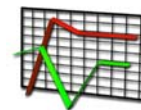
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