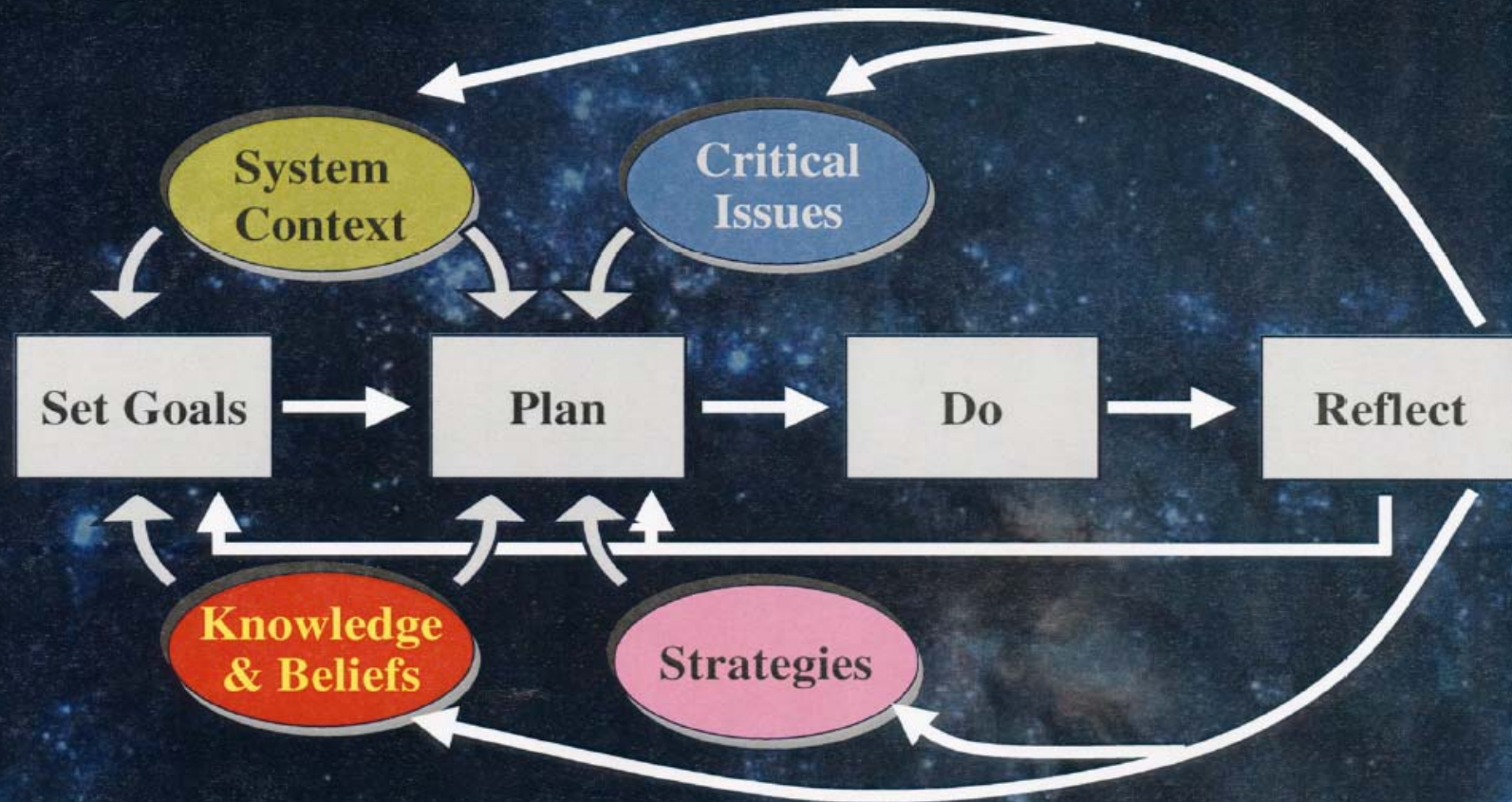


*Models for Evaluating MSP Projects
Workshop for State Leaders and Evaluators of
Teacher Professional Development
Washington, DC
April 24, 2008*

**Norman L. Webb
Senior Research Scientist
Wisconsin Center for Education
Research
University of Wisconsin
Madison, Wisconsin**

Professional Development Design Process

for Systemic Reform of Mathematics and Science Education



Product: Designing Effective Professional Development For Teachers Of Science and Mathematics

Program Stages

- Planning
- Implementation
- Impact

First Steps in Initiating an Evaluation

- Finding an evaluator
 - External/internal
 - Independent/within program
- Cost for evaluation
- Scope for evaluation

Evaluation for Program Planning

Compatibility between Program Design and Evaluation Design

No causation without
manipulation

Experimental and Quasi-Experimental Designs

- Pre-Post Test
- Pre-Post Test with a Control Group
- Post Test Only
- Post Test with a Control Group
- Random Assignment
- Multiple Levels
 - Teacher – Student
 - School – Student
- Trend Analysis—Baseline, Periodic Assessments

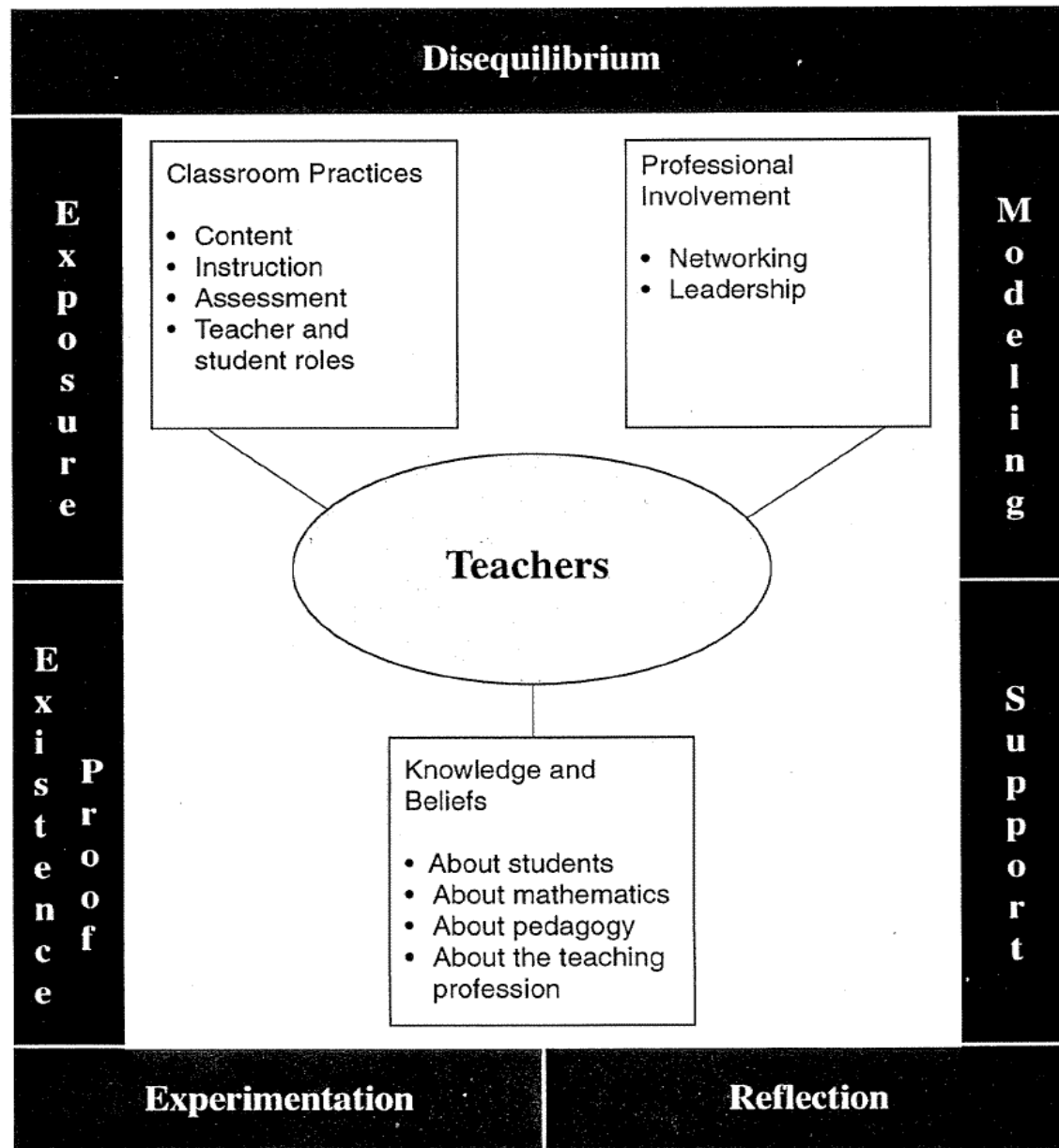
Professional Development Program Design

- Selection of Teachers
 - All
 - Volunteers
 - Purposeful
- Selection of Schools
 - All
 - Volunteers
 - Purposeful
 - Stratified

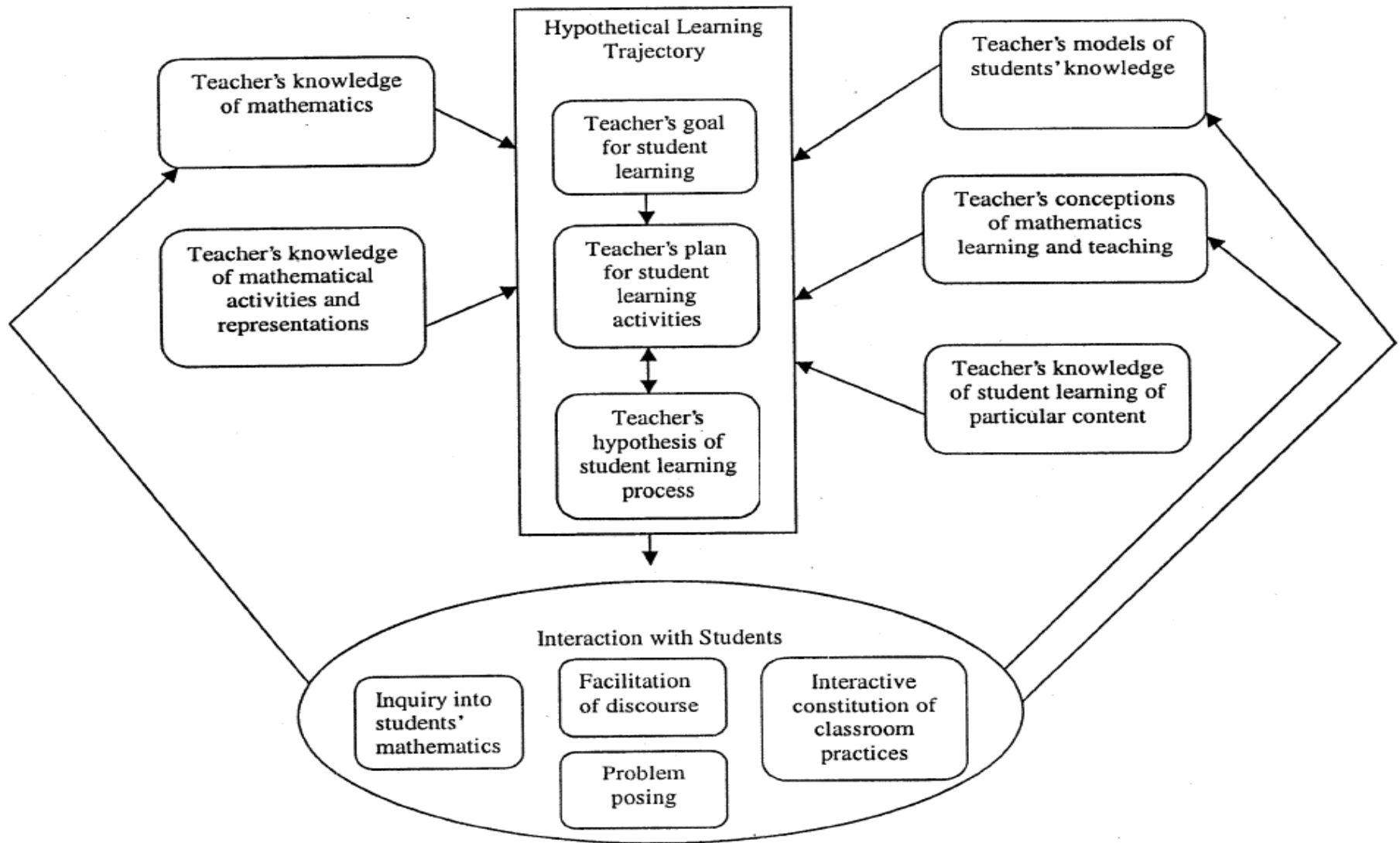
Evaluation of Program Theory

- Research Based
- Logic

Figure 2. Elements of Teachers' Professional Growth



= Elements of Professional Growth
 = Domains of Professional Teaching



Simon, 1997 Mathematics Teaching Cycle

Logic Model Framework for Listing Program Activities

	Policy	Management		Curriculum and Instruction		
INPUTS						
ACTIVITIES						
INTERIM						
OUTCOME						

Professional Development Activities

	Curriculum and Instruction		
ACTIVITIES	D4) MTLs support other teachers	D5) Teachers -after school weekly classes	D6) Teachers -one-week summer institute
	E4)	E5)	E6)Teachers -bi-weekly grade level meetings
	F4) MTLs monthly two-day workshops on leadership	F5)	F6)

Professional Development Interim Outcomes

	Curriculum and Instruction		
INTERIM	I4) MTLs' beliefs, attitudes, and practices become aligned with reflective teaching	I5) Teachers build confidence in reflective teaching of mathematics	I6) Teachers independently use reflective teaching strategies
	J4) MTLs gain leadership skills and recognize teachers' growth in reflective teaching	J5) Teachers build deeper understanding of content and student thinking	J6)
	K4)	K5) Teachers gain skills at recognizing student mathematical thinking and experiment with techniques	K6) Teachers make instructional and curriculum decisions based on students' understanding
	L4)	L5) Teachers evaluate students' understanding based on viable model of how mathematical understanding develops	L6) Teachers learn to manage reflective teaching classroom

Program Implementation and Evaluation

Guskey's Five Critical Levels of Evaluating Professional Development

1. Participants' Reactions,
2. Participants' Learning,
3. Organization Support for Change,
4. Participants' Use of New Knowledge and Skills
5. Student Learning Outcomes.

Guskey, T. R. (2000). *Evaluating professional development*. Thousand Oaks, CA: Corwin Press. As reported by Monsaas and McGee-Brown, *Evaluating Professional Learning Communities Using Mixed, Quantitative and Qualitative Methodology*, MSP Evaluation Summit, September 2005. CD available from Consortium for Building Evaluation Capacity, Utah State University.

Some Issues Related to Evaluating the Implementation of Professional Development

- Time Frame
- Proof-of-Concept Studies
- Breadth vs. Depth
- Formative Studies
- Aligned Measurement Instruments
- Living with Imperfection
- Analytic Horizon Mismatch with Funding

Frequently Used Methods in Evaluation of Professional Development Programs

- Case Studies
- Experimental Designs
- Multi-Variant Designs
- Trend Analyses

Frequently Used Tools in Evaluating Professional Development Programs

- Surveys
- Observations
- Interviews
- Focus Groups
- Teacher Logs
- Content Knowledge Tests

Web Sites with Evaluation Instruments

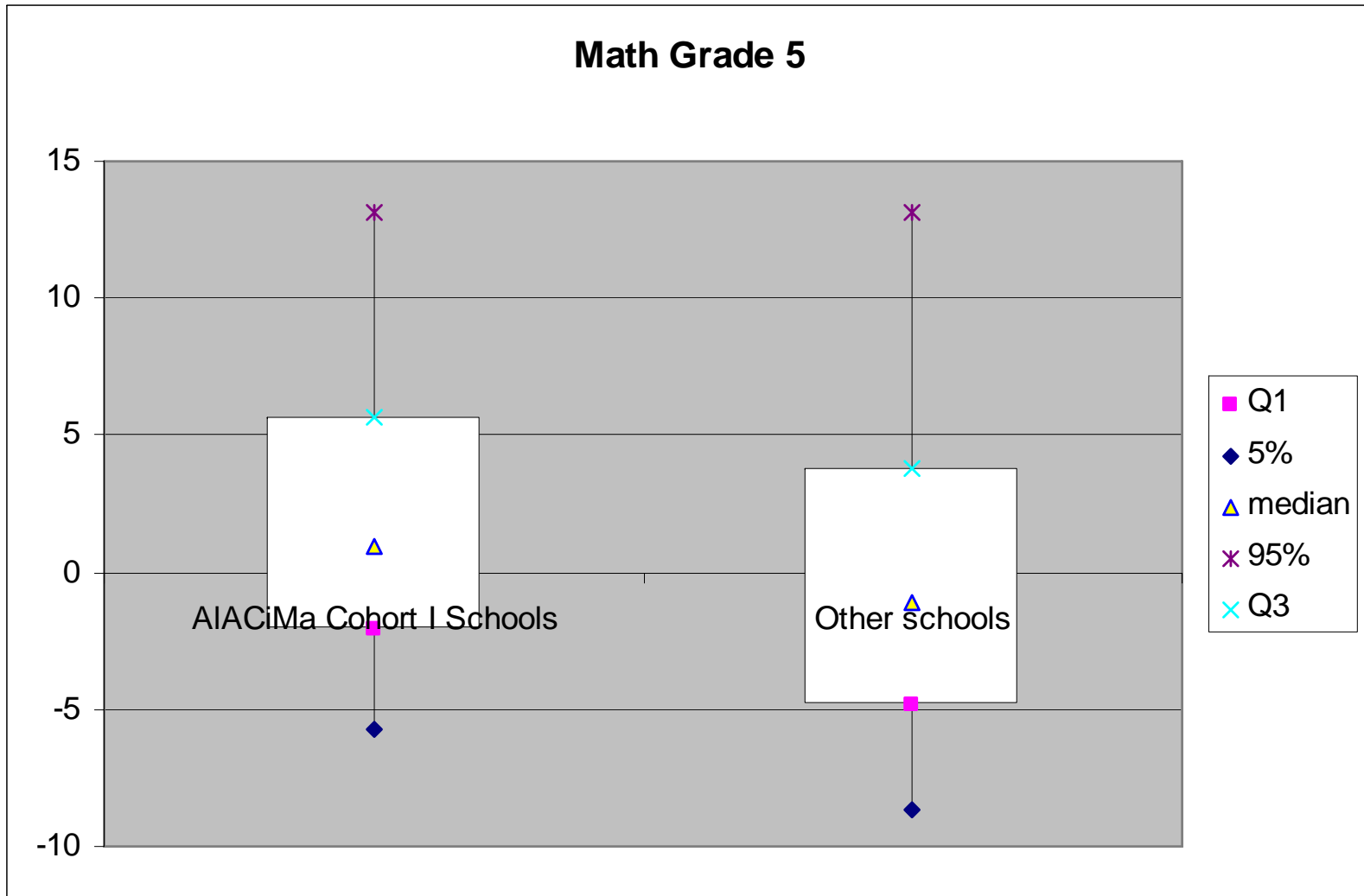
- www.consortium-chicago.org
- <http://ed.uwn.edu/CAREI/cetp>
- <http://www.horizon-research.com>
- ptambe@inverness-research.org
- <http://www.addingvalue.org/>

Less Frequently Used Tools

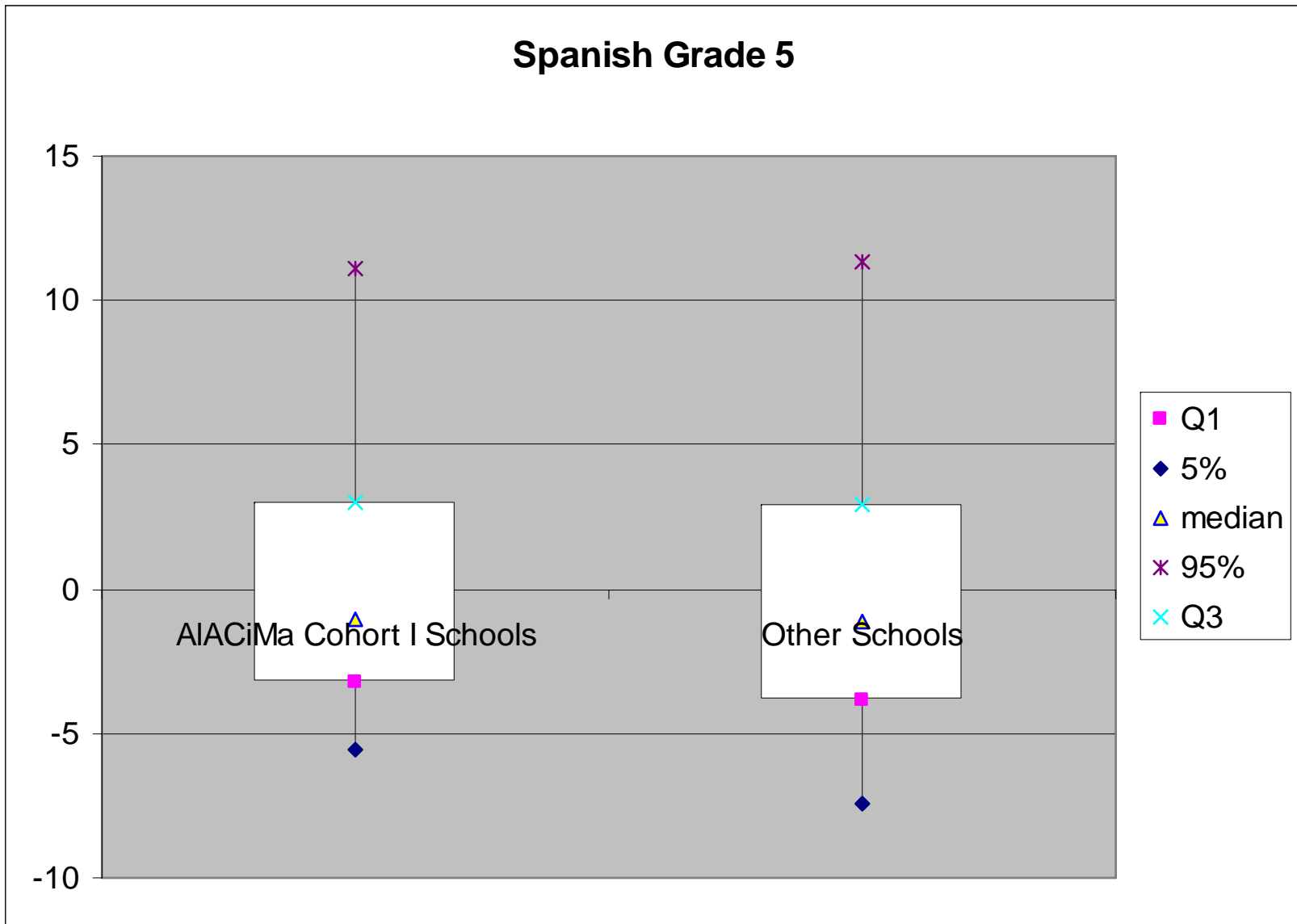
- Content Coverage Maps
- Concept Maps
- Student Work Samples

Program Impact

Value-Added Effect on Mathematics Scores from Grade 4 to Grade 5, 2003-2005



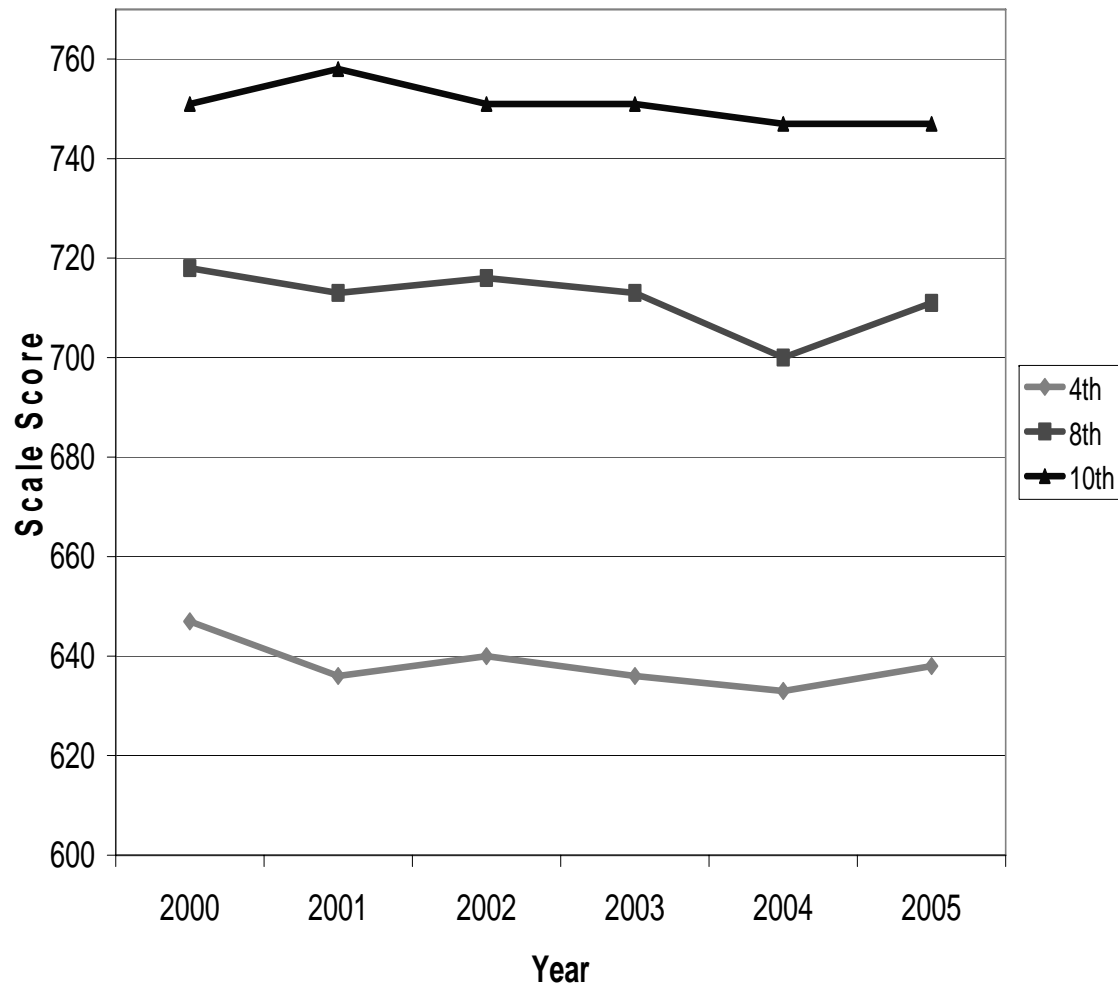
Value-Added Effect on Spanish Scores from Grade 4 to Grade 5, 2004-2005



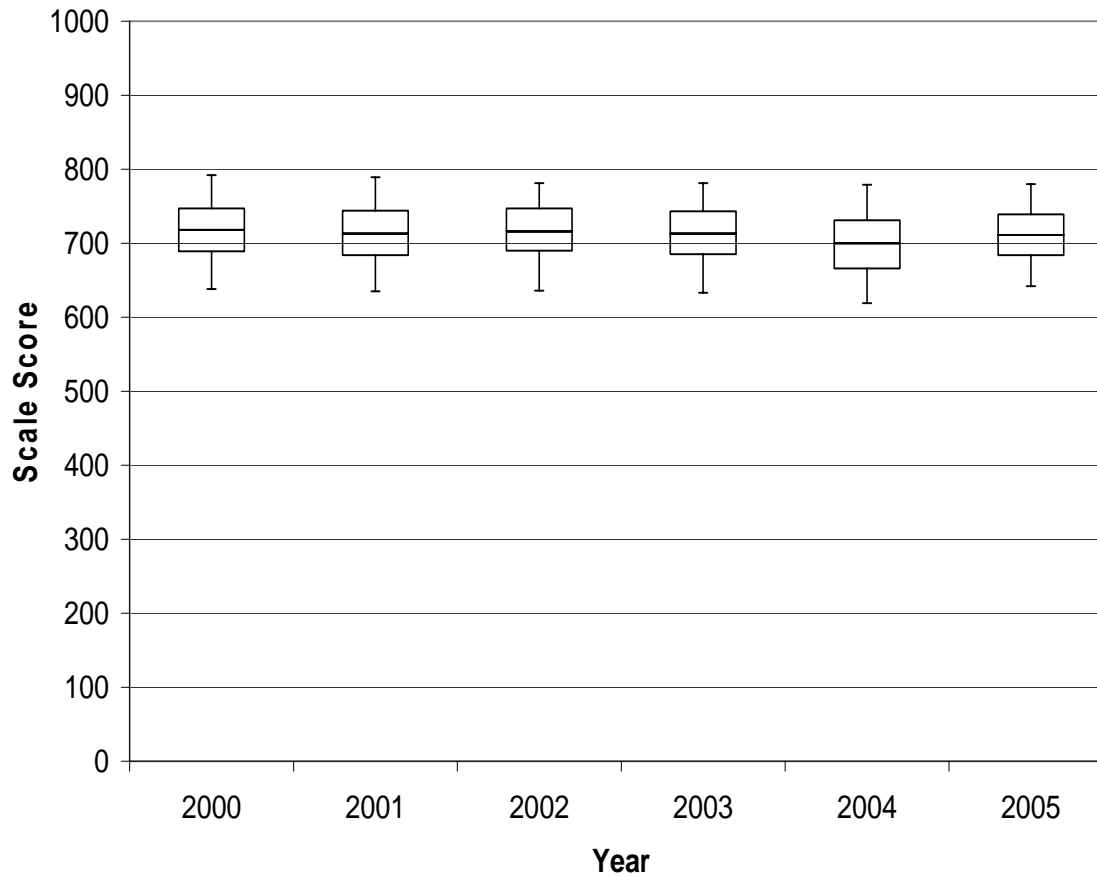
Value Added Effect of AIACiMa Schools for Grade 5 by Content Area for Cohort 1 2004-2005

Grade 5 Subject Matter	AIACiMa Parameter Estimate	Standard Error	t Value	Pr > t
Mathematics	1.26	0.68	1.86	0.06
Spanish	-0.07	0.58	-0.12	0.90

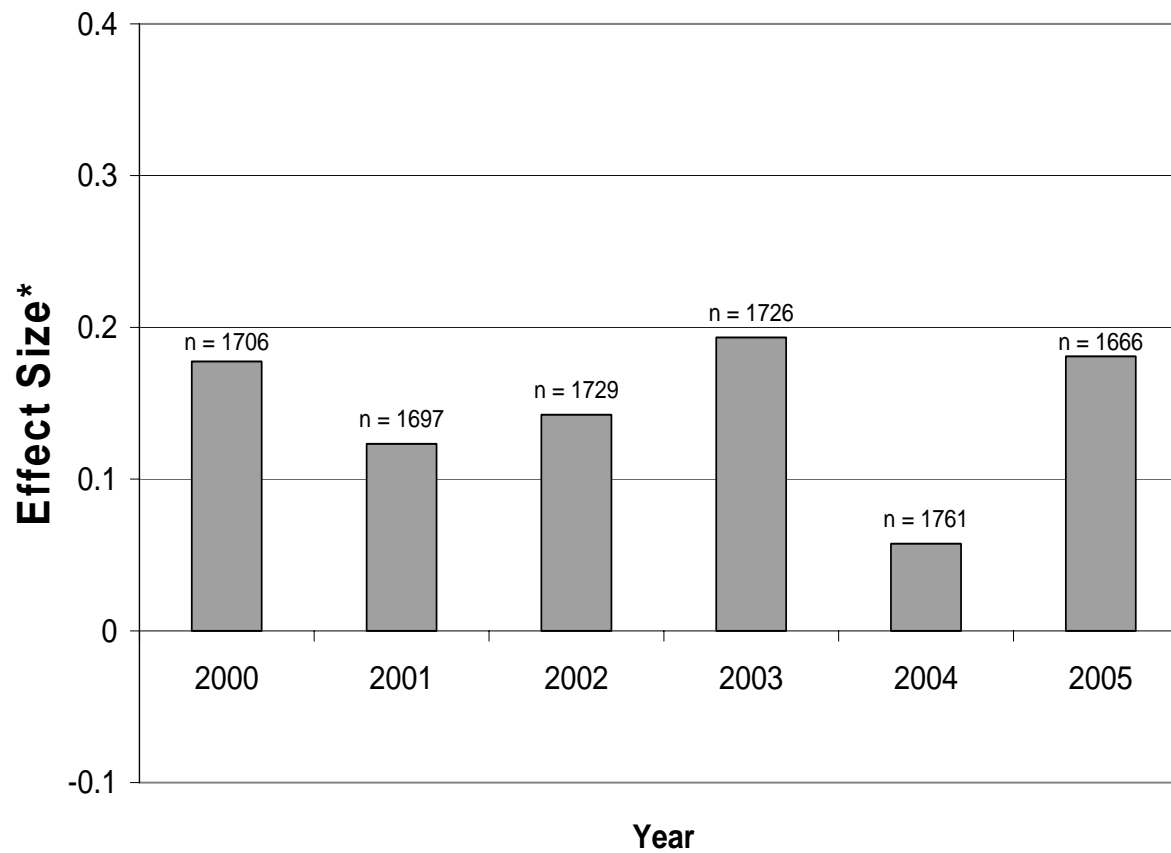
MMSD Mean Math Scale Scores for Grades 4, 8, and 10 2000-2005



MMSD Math Mean, First and Third quartile, and 5th and 95th Percentile Scores for Grade 8 2000-2005



Normalized Scale Score Effect Size Between MMSD and WI for Math Grade 8 2000-2005



Evaluators Need to be Realistic

- Program design will change
(27 of 40 evaluators, 68%)
- Collecting student data is challenging
- Access to school, teachers, and students can be difficult
- There is a trade off between collecting data and writing about results
- Qualitative and quantitative data collections requires a balance

What Has Worked for MSP Evaluators

- Continual Communication with Stakeholders
- Conducting Case Studies
- Analysis of Teacher-Learning Logs a Value to Stakeholders

Final Thoughts

It is not the direction of the wind,
but the set of the sails that guides
the boat.