Milwaukee Mathematics Partnership

Comparison of Math Teacher Leader Models: Value-added Analysis of Student Achievement in Schools with Released and Non-released Math Teacher Leaders

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Agenda

○ MMP Background

○ Key Questions for Discussion

○ Conceptual Framework

○ Explanatory Framework

○ Discussion

MMP Goals

- Comprehensive mathematics framework

- Distributed leadership

- Teacher learning continuum

- Student learning continuum

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MMP Background

- Funding
  - October 2003 MSP Phase I Award (Year 8)
  - January 2009 MSP Phase II Award (Year 3)
  - September 2008 funding from the State of Wisconsin for released MTL positions (Year 3)

- Important strategic shift—implementation of released-time MTL Model beginning in the second half of 2007-2008 school year.

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Key Questions

- What types of math teacher leader models have been implemented in school districts across the country?

- To what extent have various models proved efficacious for improving student results?

Conceptual Framework

- Released MTL Strategy
  - 114 schools
  - 80% of time MTL works with adults
  - 20% of time MTL works with students
  - Lesson planning, model lessons, examine student work, review data

- This strategy was critical for sustaining the MTL role in schools

Explanatory Framework—Methods

- Examine WKCE 'value added' data and WKCE attainment data

- Look at the distribution of low and high performing schools in Grades 3-5 and Grades 6-8

- Compare distributions of schools with released and non-released MTLS

Analytical Framework

○ Determine if having a released MTL *predicts* placement in a given quadrant

○ Use the *Phi* statistic as a measure of correlation between nominal data

- Significant results indicate that having a released MTL predicts quadrant placement
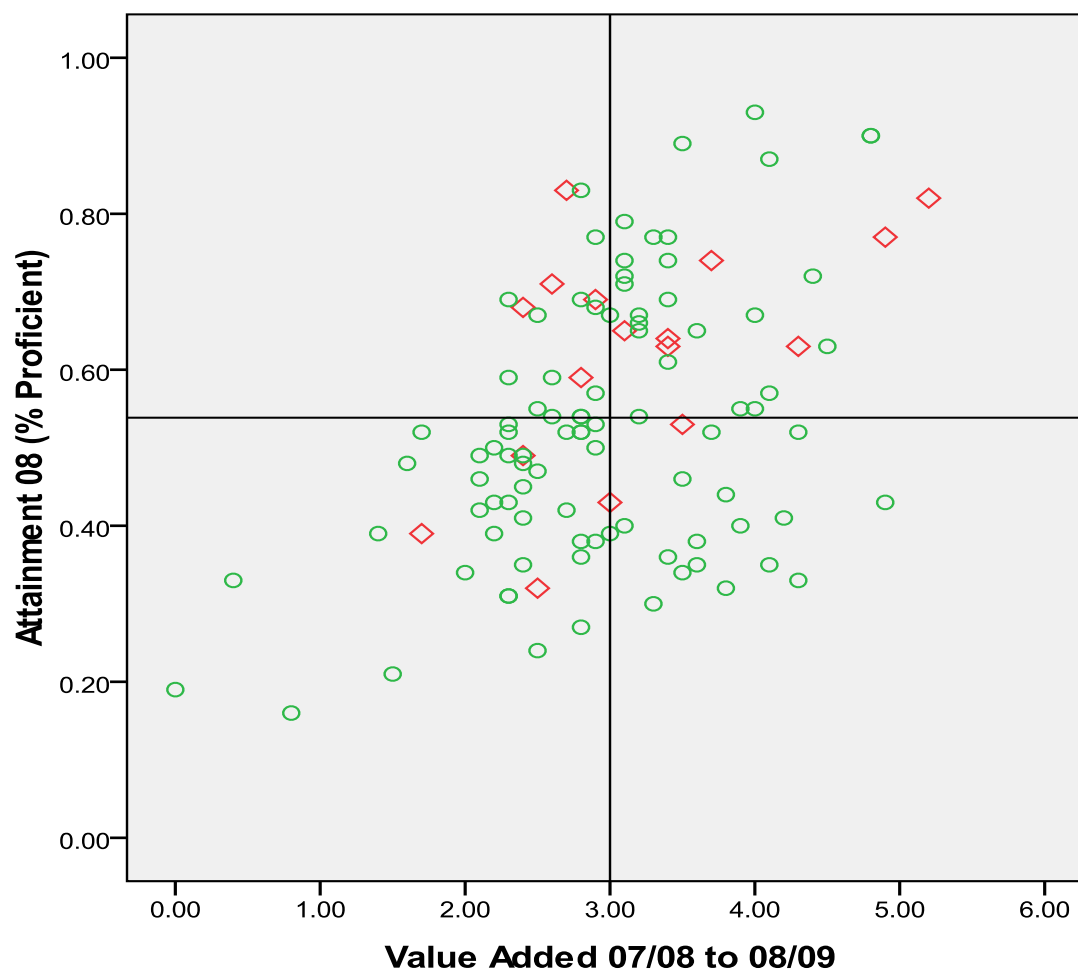- Non-significant results indicate no differences

Elementary Results—Year 1

Figure 1. Elementary Value Added from Fall 2006 to Fall 2007 versus Fall 2007 Attainment
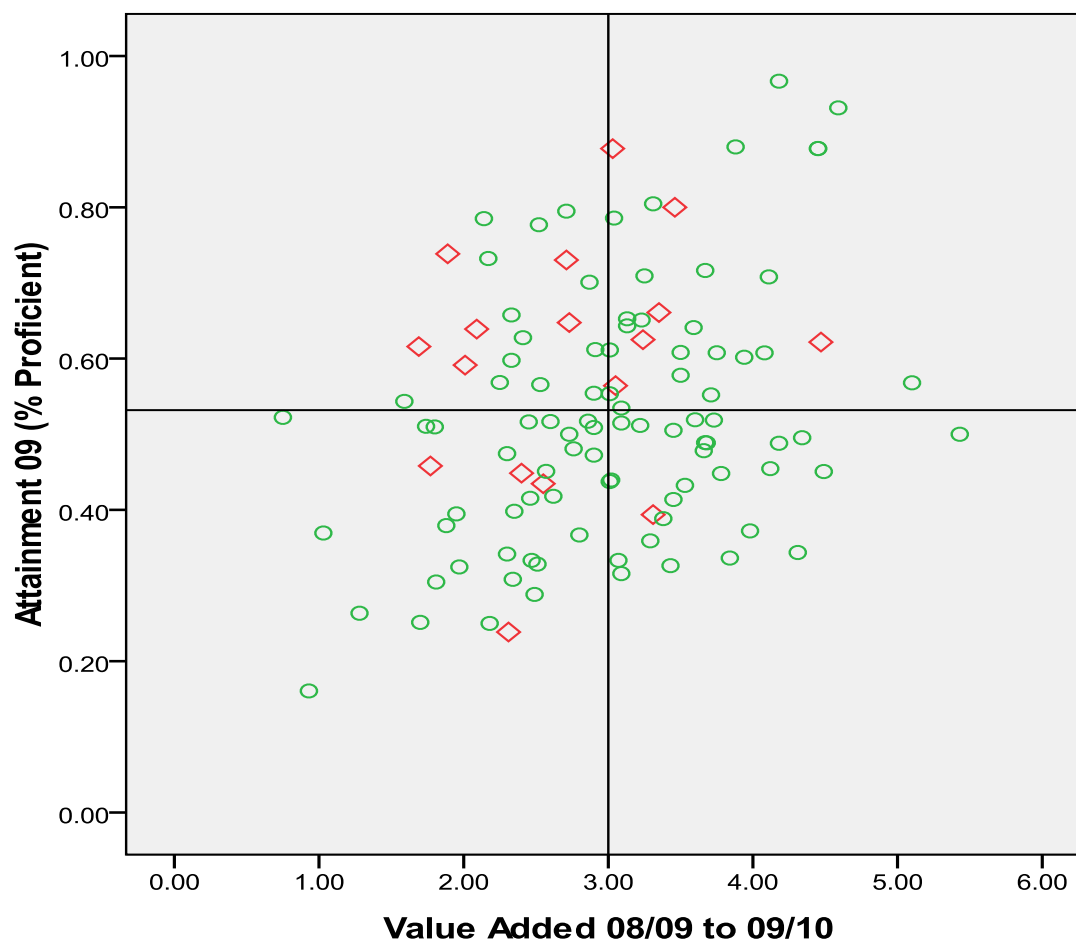

Phi = .26
p = .07
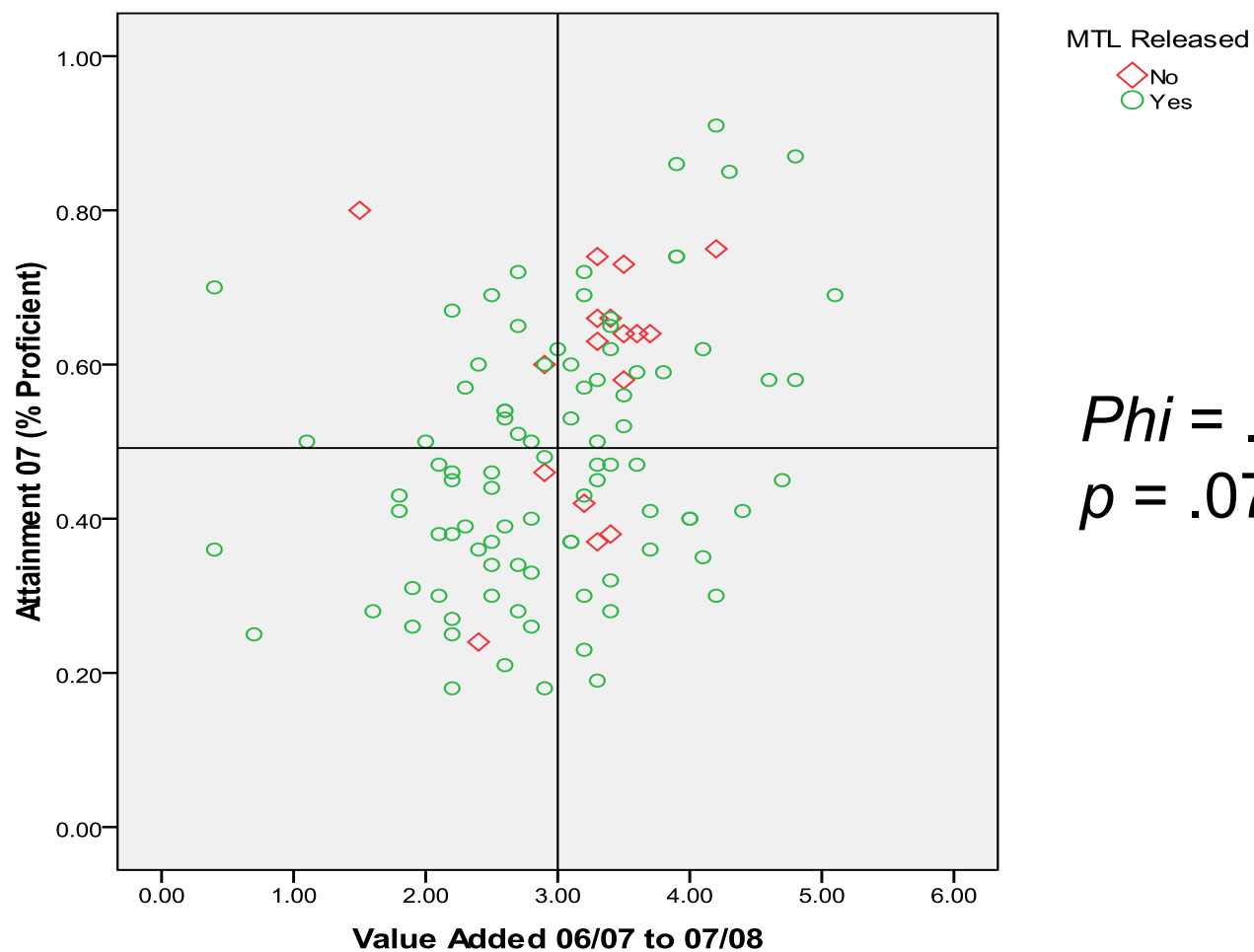
Elementary Results—Year 2

Figure 2. Elementary Value Added from Fall 2007 to Fall 2008 versus Fall 2008 Attainment
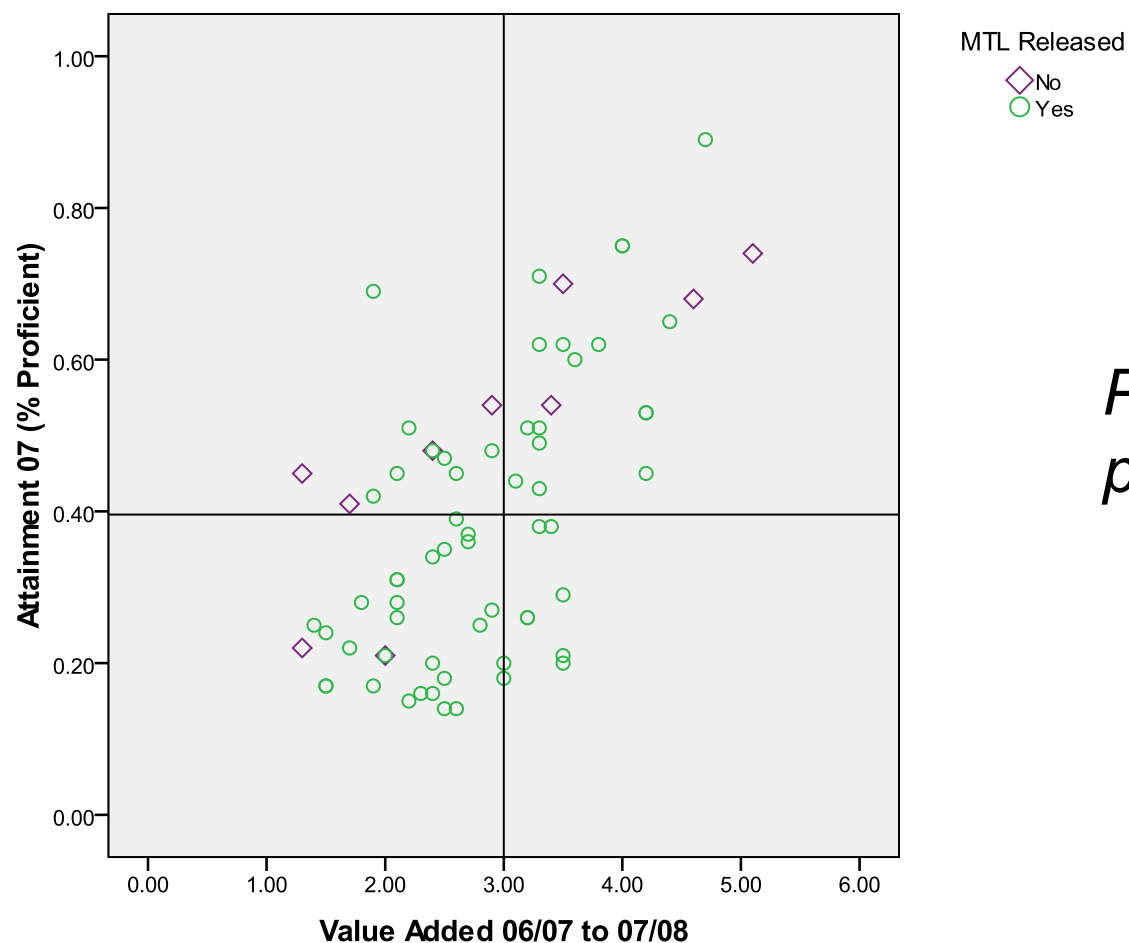

Phi = .26
p = .05

Elementary Results—Year 3

Figure 3. Elementary Value Added from Fall 2008 to Fall 2009 versus Fall 2009 Attainment

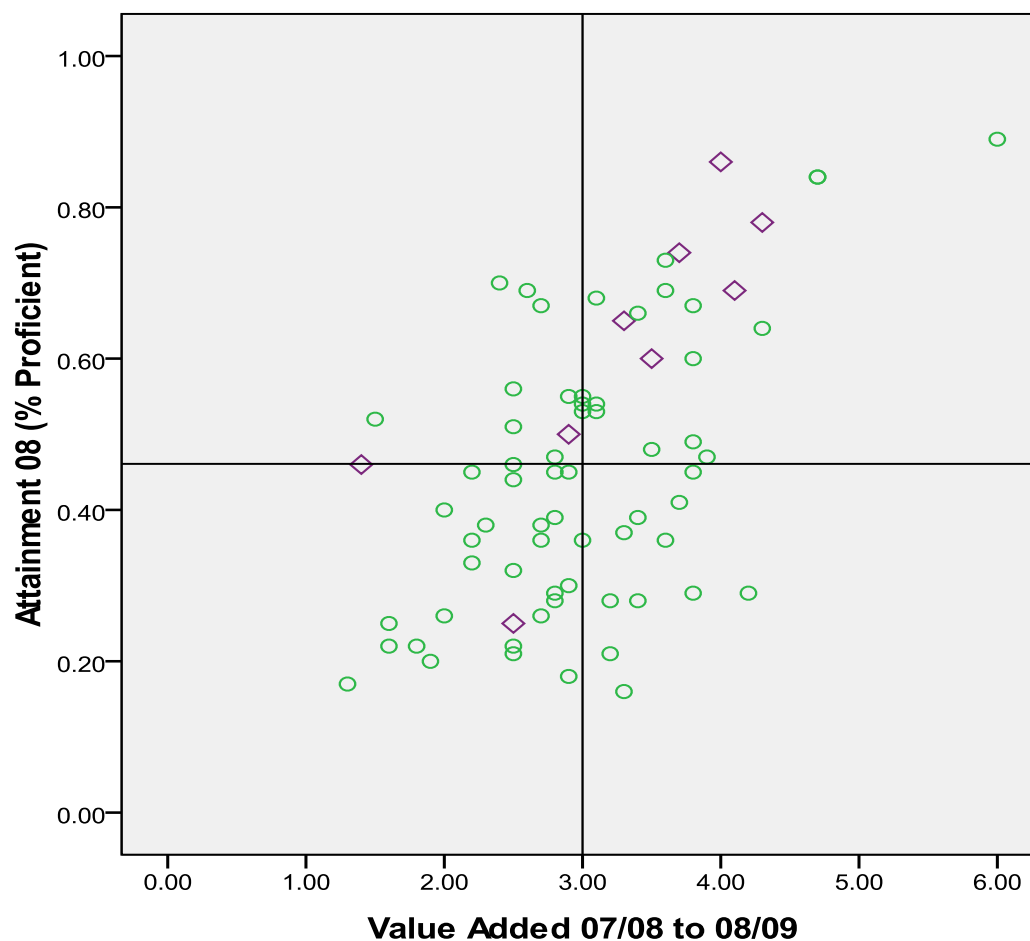*Phi* = .24
p = .11

Middle School Results—Year 1

Figure 4. Middle School Value Added from Fall 2006 to Fall 2007 versus Fall 2007 Attainment

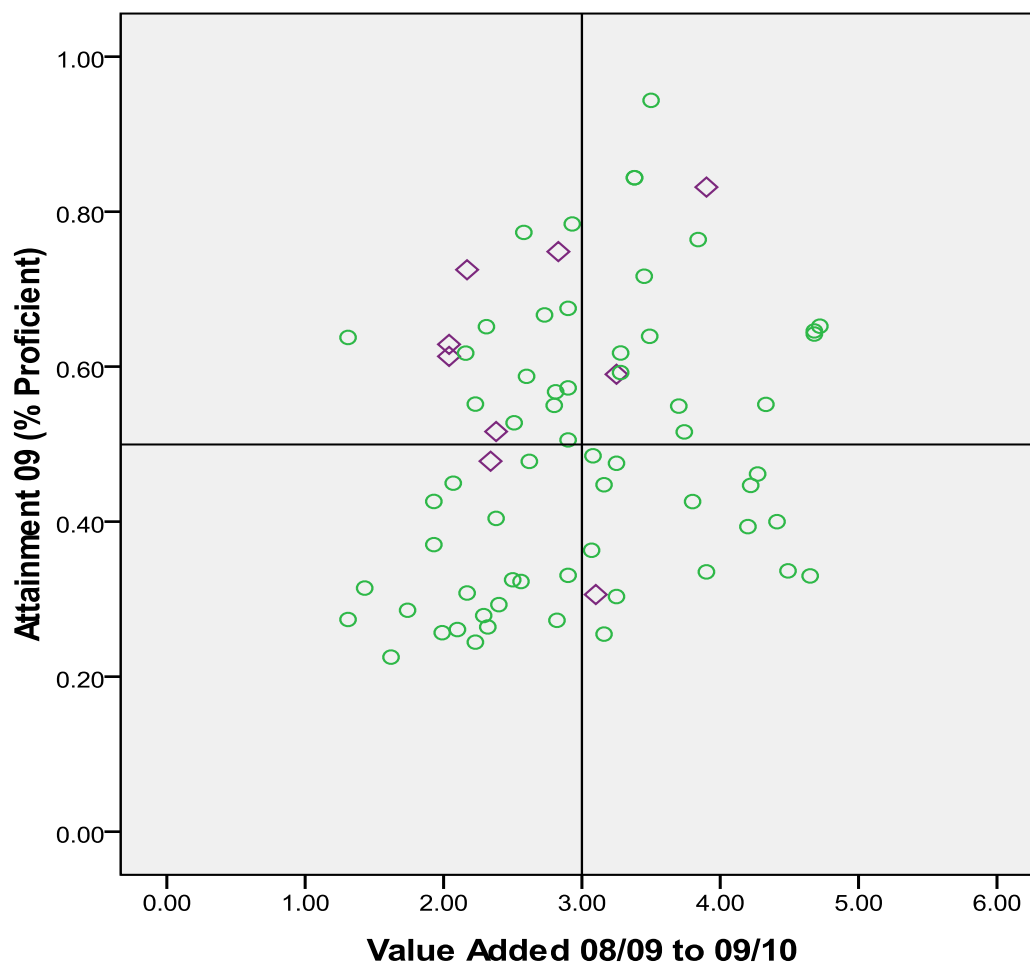*Phi* = .31
p = .09

Middle School Results—Year 2

Figure 5. Middle School Value Added from Fall 2007 to Fall 2008 versus Fall 2008 Attainment

Phi = .29
p = .11

Middle School Results—Year 3

Figure 6. Middle School Value Added from Fall 2008 to Fall 2009 versus Fall 20079Attainment

$Phi = .28$
$p = .13$

Conclusions

○ The MTL release model has led to improvements in underperforming schools.

○ The initial disparities in achievement between underperforming schools with a released MTL and higher performing schools without a released MTL are disappearing.

○ This suggests that the released MTL model may be a better solution for underperforming schools than the non-release model and that MTLs are having a positive impact in many schools.

Discussion

○ What types of math teacher leader models have been implemented in districts where you are working?

○ What evidence have you developed to demonstrate that various models have potential for improving student results?