

Design-Based Implementation Research in Schools: Benefits & Challenges

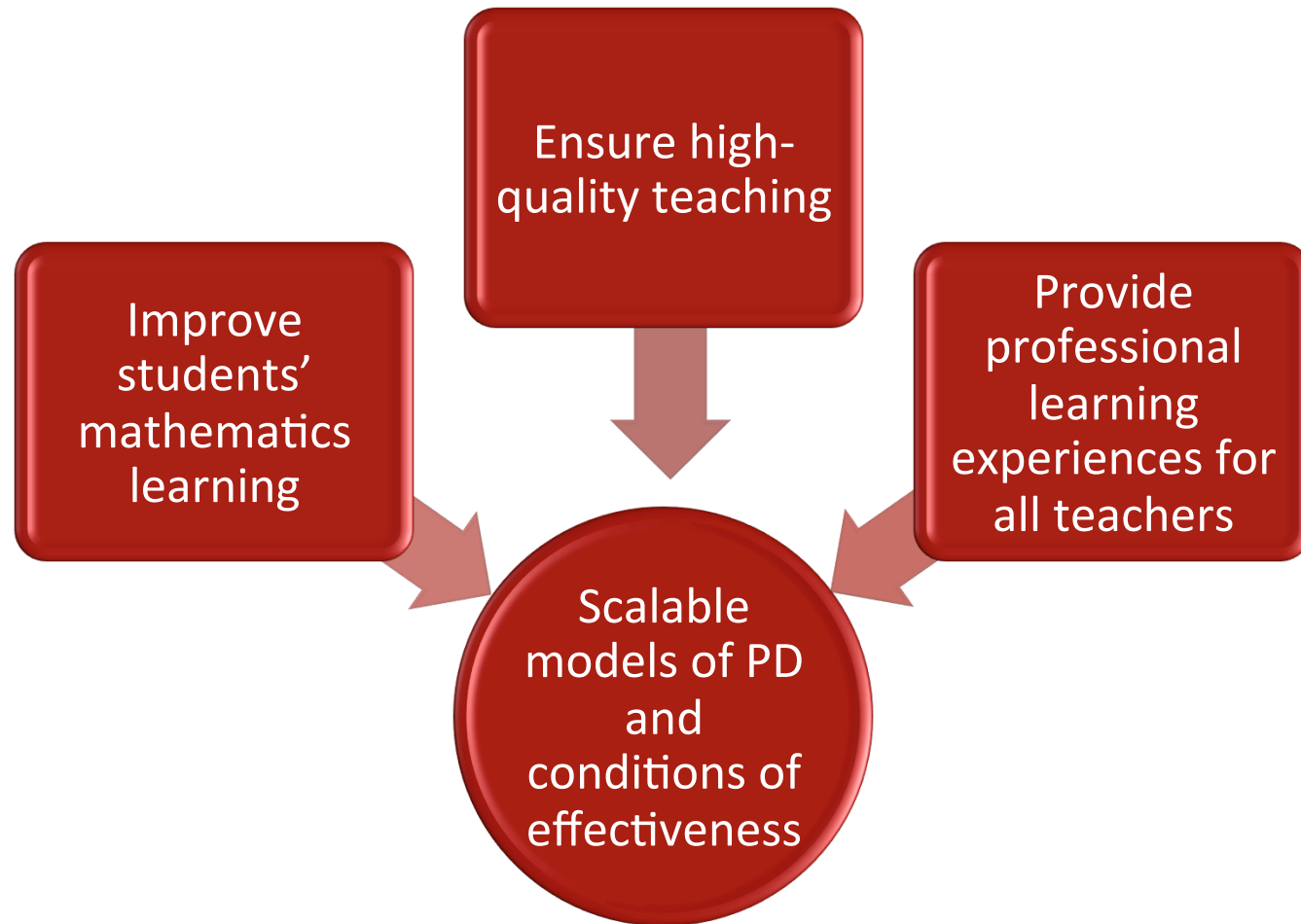
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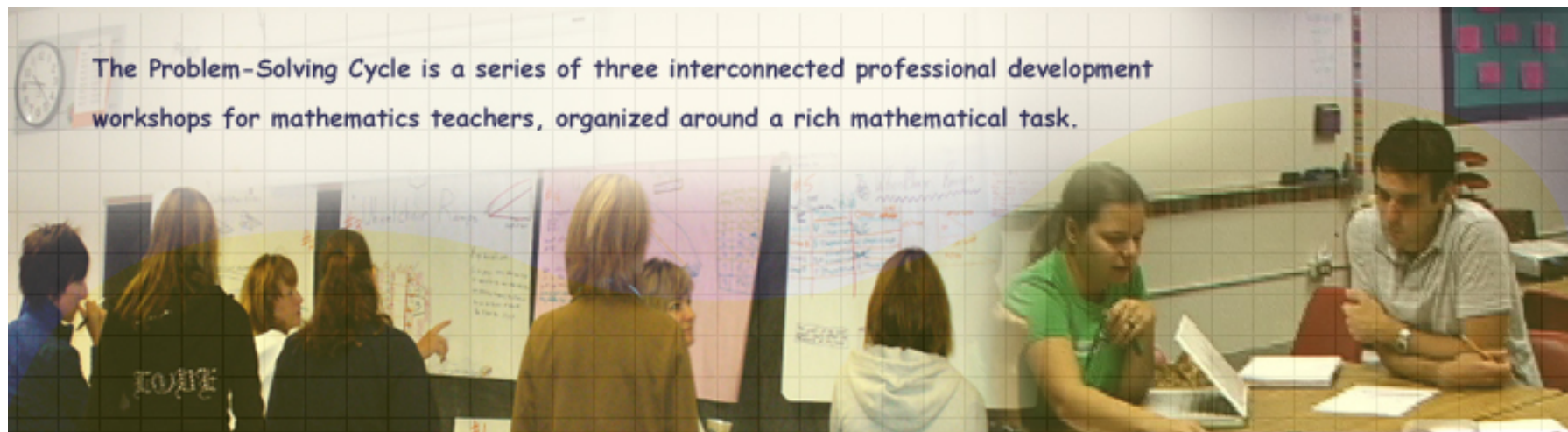
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DBIR Principles

- Persistent problems of practice from multiple stakeholders' perspectives
- Iterative, collaborative design
- Develop theory related to both classroom learning and implementation through systemic inquiry
- Develop capacity for sustaining change in systems

Persistent Problems of Practice

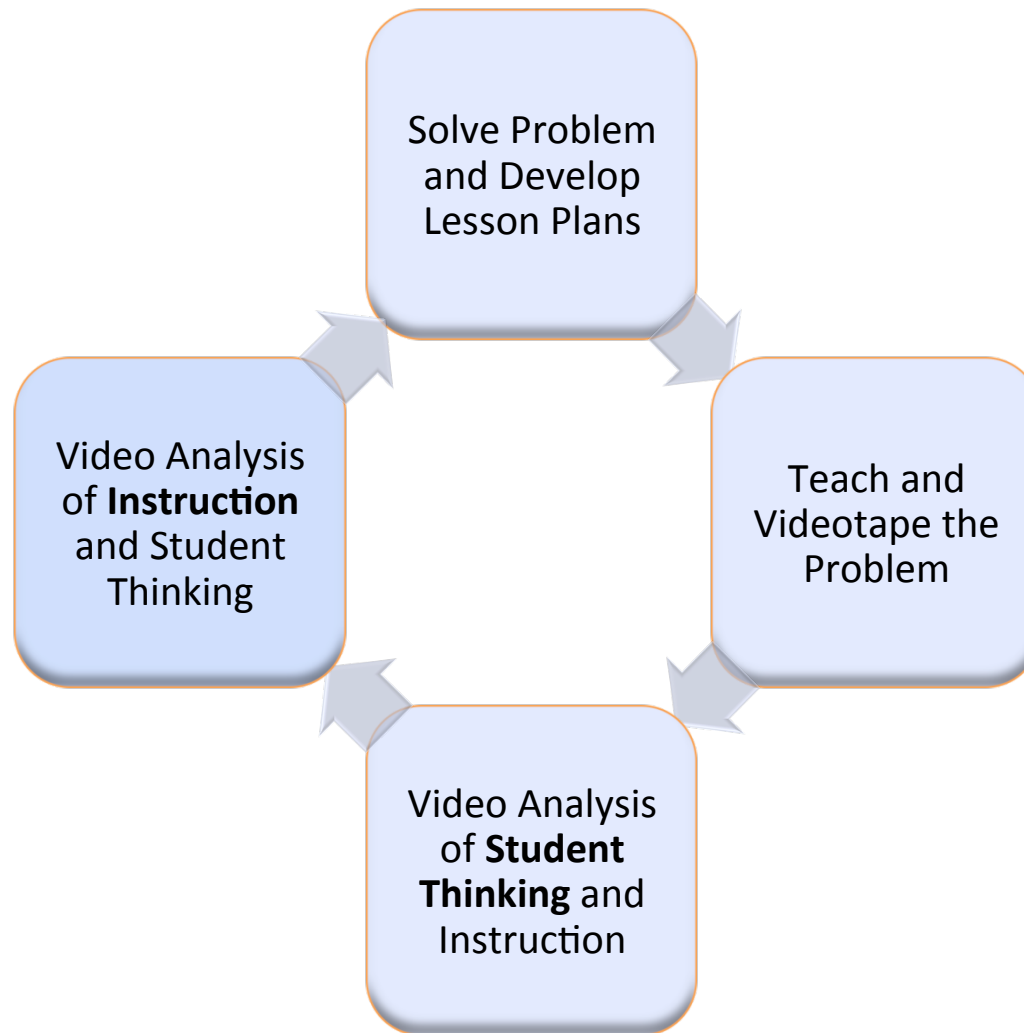




Preparing Teacher Leaders to Facilitate Mathematics Professional Development

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The Problem-Solving Cycle

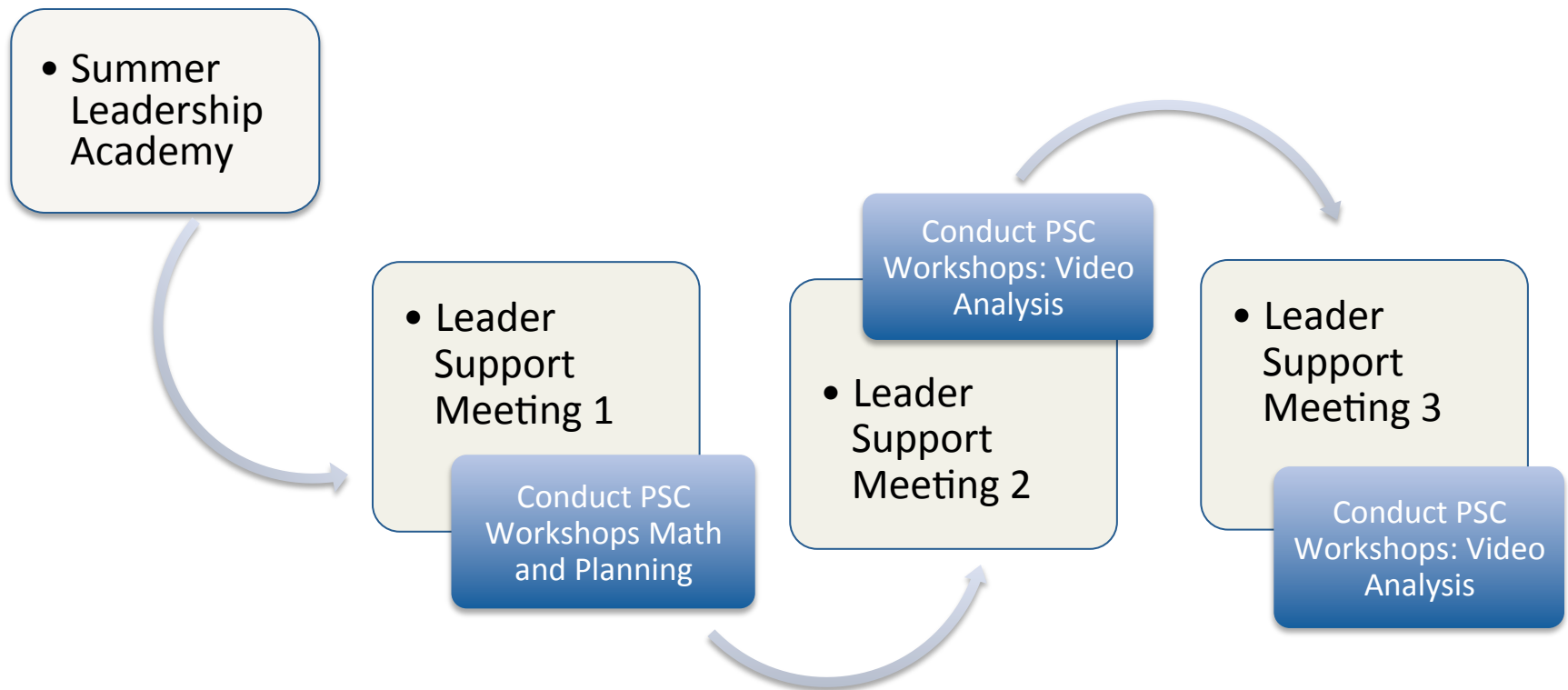


Implementing the Problem-Solving Cycle (iPSC)

- Is the Problem-Solving Cycle model of PD effective in improving instructional practices and student learning?
- Can it be adapted to different contexts?
- Can it be successfully enacted by different PD leaders without the extra support of the research project?



The Mathematics Leadership Preparation Model



PSC and Local Context

We learned that:

- Effective in improving teachers' knowledge and instructional practices
- Successfully enacted by different teacher leaders
 - Teacher leaders adapted the PSC workshops for their own teachers and school contexts.
- Responsibility successfully shifted to district math coordinator

The CSET/SFUSD Researcher-Practitioner Partnership

- Project Goals
 - Develop and test a large-scale, system-level PD program aligned with the CCSS that is scalable and sustainable
 - Build capacity in SFUSD to conduct site-based PD
 - Refine theories of teacher and leader learning
- The Starting Point
 - SFUSD's new task-based mathematics Core Curriculum
 - CSET's PSC and MLP models

CSET/SFUSD Collaboration

- SFUSD Math Core Curriculum units aligned with CCSS, rolled out beginning Fall 2014
- PD by C&I Mathematics Department through Teacher Leader model
- Focused PD support in waves
 - Year 1: middle schools & k-8 schools
- Fit with PSC and MLP models
 - Teaching with rich math tasks
 - Teacher Leader model for site-based PD
- CSET to begin by working with TLs at 2 schools

Initial Modifications

Modifications to the timeline

- Funding began 1/1/15 rather than 9/1/14
- Spring 2015
 - Select Design Team schools
 - Attend ongoing PD for Teacher Leaders and Teachers

Modifications to the PSC and MLP

- Must use Core Curriculum tasks
 - Tasks still being revised
 - PD must be grade-level specific
- Must fit with multiple ongoing initiatives
 - Incorporate iPads in teaching

Ongoing Negotiations: The “Practical Measures” Example

- *Practical measures* for DBIR collaborations
 - Explicitly linked to improvement goals
 - Data collection relatively undemanding
 - Rapid data analysis and prompt feedback
 - Recommended actions feasible
- The initial measures: student surveys
 - Small Group Discussion
 - Teacher Press

Small Group Discussion: Researcher Plans – Pilot Testing

Today I explained my thinking to another student in my group.

- *Think aloud:*
- *Probes:*
 - What do you think is meant by “explain my thinking”?
 - Could you give an example of a time you explained your thinking?

Small Group Discussion: Practitioner Plans - Immediate Use

Today I explained my thinking to another student in my group.



Yes	14	78%
No	4	22%

Challenges of DBIR

- Balancing competing priorities
 - Improve practice
 - Study change
 - Meet accountability demands
- Labor intensive
 - Data collection and analysis
 - Ongoing communication
- Differences in timelines



Benefits of DBIR

- Iterative design enables rapid cycles of design, implementation, testing, and improvement
- Practical measures provide information quickly and without disruption
- Fosters long-term sustainability
- Creates realistic solutions to persistent problems of practice

Thank you!

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Borko, H., Jacobs, J., Koellner, K., & Swackhamer, L. (in press, 2015).
Mathematics professional development: Improving teaching using the Problem-Solving Cycle and Leadership Preparation models. New York: Teachers College Press