Design-Based Implementation Research in Schools: Benefits & Challenges

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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

- Ensure high-quality teaching
- Improve students’ mathematics learning
- Provide professional learning experiences for all teachers

Scalable models of PD and conditions of effectiveness
Preparing Teacher Leaders to Facilitate Mathematics Professional Development

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The Problem-Solving Cycle

- Solve Problem and Develop Lesson Plans
- Video Analysis of Instruction and Student Thinking
- Video Analysis of Student Thinking and Instruction
- Teach and Videotape the Problem
• 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

- Summer Leadership Academy
- Leader Support Meeting 1: Conduct PSC Workshops Math and Planning
- Leader Support Meeting 2
- Leader Support Meeting 3: Conduct PSC Workshops: Video Analysis
- Conduct PSC Workshops: Video Analysis
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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