MBUSD Common Core Mathematics Workshop

Dr. Michael Matthews and Dr. Brett Geithman

March 18, 2015

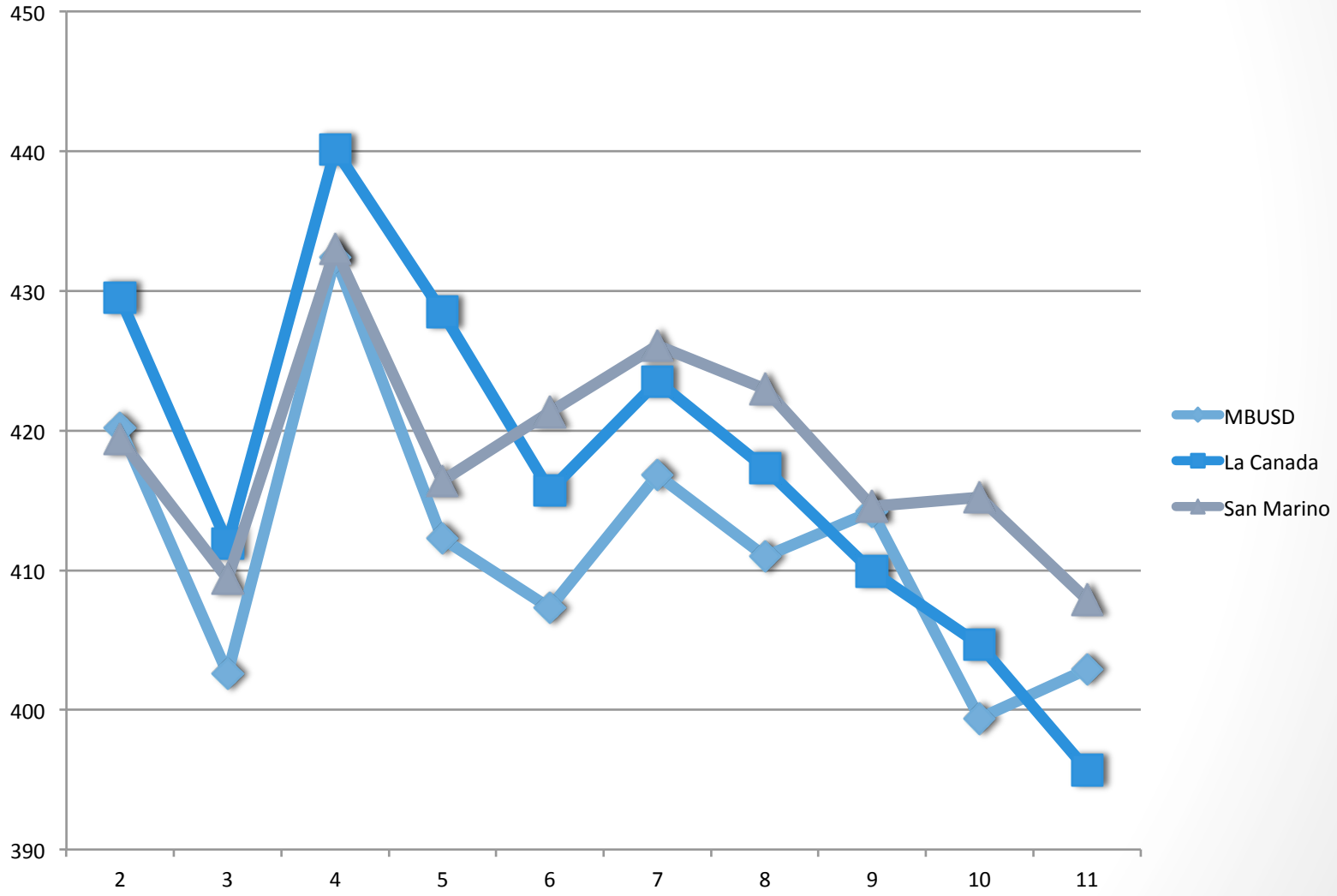
Phil Daro

http://vimeo.com/81636441

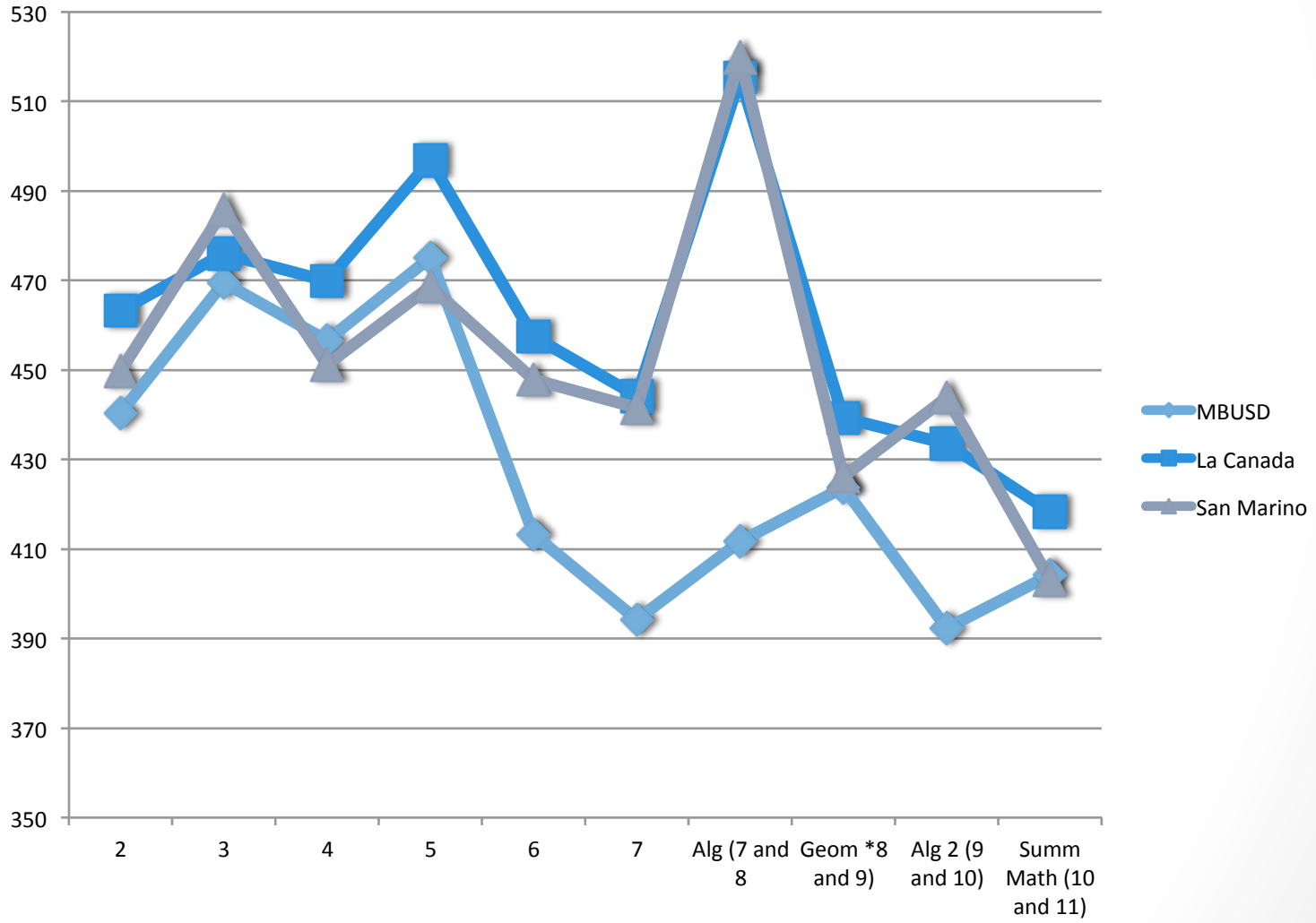
How did we get here?

- Other nations outperform the US in mathematics and science
- Misalignment with practice and research
- Common Core State Standards
- Standards for Mathematical Practice
- Board presentation comparing MBUSD to San Marino and La Canada
- Tutors
- MBEF and community support
- LCAP goals
- Board goals
- California Content Standards and the CST were “answer getting” and procedural/skill fluency heavy

ELA Scores 2012



Math Scores 2012



So what are we doing about it?

UCLA Observation Report Cycle Pre/Post

- Every secondary mathematics teacher observed two times for up to 20 minutes per observation

- Focus of observations
  - Student Talk/Collaboration
  - Types and Levels of Questioning
  - Wait Time
  - Accessing Prior Knowledge

UCLA Observation Report Cycle Findings

Student Talk/Collaboration

- Most classrooms were teacher-centered, while the Common Core demands a learner-centered approach.

Types and Levels of Questioning

- Common Core demands a range of Level 1-4 Depth of Knowledge questions as described in the Hess Matrix, majority of teacher questions were at Levels 1-2.

UCLA Observation Report Cycle Findings

Wait Time

- Most of the time students were given one second or less think time before accepting answers, whereas the Common Core focuses heavily on student thinking, thus requiring more wait time.

Accessing Prior Knowledge

- Instances where students were asked to not start a problem until the teacher demonstrated what to do or defined a specific process, whereas the Common Core demands productive struggle based on what students already know coming into a given problem.

So what are we doing about it?

- UCLA Center X
  - Dr. Megan Franke
  - Dr. Carolee Koehn
  - 5 days for secondary workshops (Balanced Mathematics)
  - 4 days for elementary workshops (CGI)
  - 120 days of coaching for secondary
  - 120 days of coaching for elementary and secondary proposed for 2015-16
- Curriculum Mapping
- Mathematics Committee
  - Three-Year Timeline presented on 3/4/15 (attached to agenda item)
- Weaver and Rossmoor observations

Strategy/Activity Harvest

PODs:
Four 4's
Trees in a Forest
Black and White Marbles
Farmer Mc Donald

Team Building:

8 norms or collaboration
Three interesting things
Marshmallow Challenge
Get it Together
Extended name tag
Community Circle

Articles and beliefs about how children learn:
Math Anxiety: Jo Boaler
Mindset: Dweck
Let's Talk!
Art of Questioning
Four steps towards productive discussions
5 practices for Orchestrating Math Discussions

Content Tasks:
Graphing Stories
Mars Task: Distance Time
Triangle Surrounded
Three of these things
Get it Together: Pile-O-Patterns

Building Number Sense:
Four in A Row
Taxman
Three of these things

Strategies:
Think Pair Share
Jigsaw
Gallery Walk
Wait Time
Sharing out as groups
Frayer Model

What does this look like?

Tyler gave his mother ___ pieces of candy for Mother's Day.

¾ of the pieces of candy had nuts.

How many pieces of candy had nuts?

How many pieces of candy did not have nuts?

(3 x 25 + 3 x 3) (8 + 8) (18 x 25 + 102)

Grade 1

Cognitively Guided Instruction (CGI)

Teri Malpass, Weaver Elementary

Name: Kai Date: 2-9-15

CGI Problem Solving

Trevor had 376 tokens to spend at Chuck E Cheese.
He used 149 of the tokens.

How many tokens does Trevor have **left** to spend? ???

(63, 44) (376, 149) (3 x 85, 2 x 119)

Strategy

376 - 149

200 30

273

Proof

227

Great Job!

My answer to this problem is: That trever has 227 left.

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