

TEACHERS AND LEADERS: CHALLENGES AND OPPORTUNITIES FOR STANDARDS IMPLEMENTATION

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Overview

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- 4 facts about the current state of instruction in U.S. K-12 schools
- 4 road blocks to the effective and faithful implementation of standards in the classroom
- 4 challenges/opportunities for research, policy, and practice

Fact 1

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□ Instruction in U.S. schools is excessively procedural

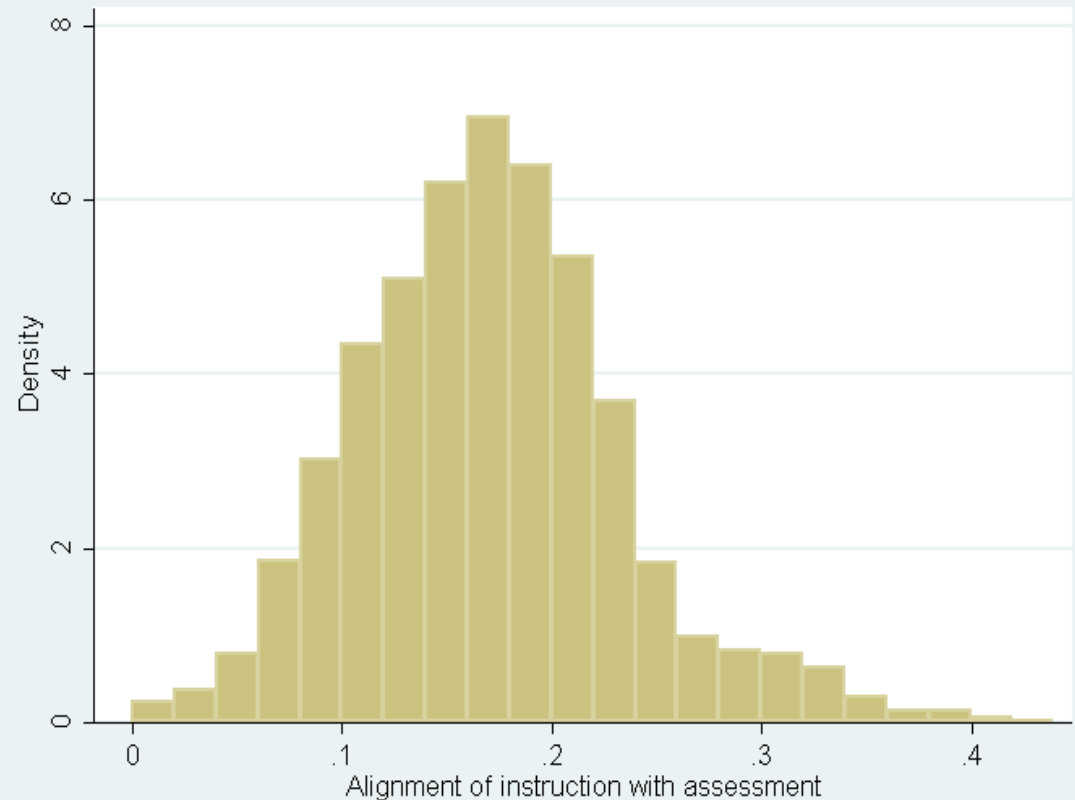
Cognitive Demand Marginal Proportions for Tests and Standards in Each Subject

Grade	N	Level B		Level C		Level D		Level E		Level F	
		Standard	Test	Standard	Test	Standard	Test	Standard	Test	Standard	Test
ELAR											
3	6	.17	.40	.31	.23	.34	.11	.13	.23	.05	.03
4	9	.12	.33	.30	.18	.35	.17	.16	.29	.07	.04
5	8	.17	.37	.19	.15	.29	.11	.22	.33	.13	.04
6	7	.12	.31	.25	.23	.37	.11	.19	.33	.07	.02
7	5	.10	.24	.23	.34	.37	.16	.22	.22	.09	.03
8	9	.12	.30	.21	.17	.35	.14	.21	.34	.11	.05
9-12	9	.03	.23	.13	.24	.45	.22	.27	.27	.11	.04
Total	53	.12	.31	.23	.21	.36	.15	.20	.29	.09	.04
Mathematics											
3	8	.19	.18	.48	.60	.27	.14	.05	.07	.01	.01
4	9	.13	.25	.58	.52	.21	.16	.06	.06	.02	.02
5	7	.12	.21	.54	.63	.23	.11	.06	.04	.05	.01
6	8	.15	.16	.46	.62	.24	.15	.11	.07	.04	.01
7	7	.14	.13	.46	.68	.23	.12	.13	.05	.05	.03
8	13	.12	.12	.48	.63	.23	.16	.10	.07	.07	.02
9-12	10	.10	.10	.57	.76	.19	.08	.10	.05	.05	.01
Total	62	.13	.16	.51	.63	.23	.13	.09	.06	.04	.01

Fact 2

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- After decades of standards-based reform, instruction remains poorly aligned with standards and assessments.
- BUT: alignment is stronger in states where the standards and assessments are more aligned with each other



Fact 3

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- Instruction is excessively shallow and broad.

Country	Standards	Texts	Tests
Total number	44	44	26
Germany	22	15	17
Japan	12	15	8
Norway	32	31	26
Singapore	22	21	18
Sweden	29	28	22
USA	44	41	26

Number of math topics in grade 8 curriculum

(Schmidt et al., 2001)

Fact 4

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□ Instruction is poorly structured from grade to grade.

Topic	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8
Organs, tissues					○	○	○	○
Physical properties of matter	○	○	○	○	○	○	○	○
Plants, fungi	○	○	○	○	○	○	○	○
Animals	○	○	○	○	○		○	
Classification of matter						○		
Rocks, soil		○	○	○	○	○	○	○
Light								
Electricity				○	○			
Life cycles			○	○	○			
Physical changes of matter								
Heat and temperature				○	○	○		
Bodies of water				○	○			○
Interdependence of life	○	○	○	○				
Habitats and niches				○				
Biomes and ecosystems								
Reproduction								
Time, space, motion	○	○			○	○	○	○
Types of forces	○	○	○	○	○			
Weather and climate	○	○	○	○	○		○	○
Planets in the solar system				○	○	○	○	○
Magnetism								
Earth's composition							○	○
Organism energy handling								
Land, water, sea resource conservation						○		
Earth in the solar system	○	○	○	○	○	○	○	○
Atoms, ions, molecules								○
Chemical properties of matter						○	○	○
Chemical changes of matter								
Physical cycles					○	○	○	○
Land forms								
Material and energy resource conservation				○		○	○	○
Explanations of physical changes								
Pollution						○		○
Atmosphere							○	○
Sound and vibration								
Cells							○	○
Human nutrition								
Building and breaking								○
Energy types, sources, conversions	○	○	○	○	○	○	○	○
Dynamics of motion								
Organism sensing and responding								

Schmidt et al., 2005

Interlude

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- Is the Common Core an improvement on these measures?
 - Less procedural? Yes, slightly
 - More “alignable?” Time will tell ...
 - Narrower and deeper? Yes, but still not as narrow and deep as in many other locales
 - Better structured? A bit, depends on the grade

- *Educational Researcher* debate between Porter et al. & Beach / Cobb & Jackson

Road Block 1

- There are 10,000 districts in the U.S., varying on:
 - Size (1,040,000 to <10)
 - Resources (\$20+ to <\$8 thousand per pupil)
 - Teacher quality & experience (capacity)
 - Student demographics & poverty
 - Level of involvement in teachers' curriculum decisions

Road Block 2

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□ Teacher norms

(Floden et al., 1981)

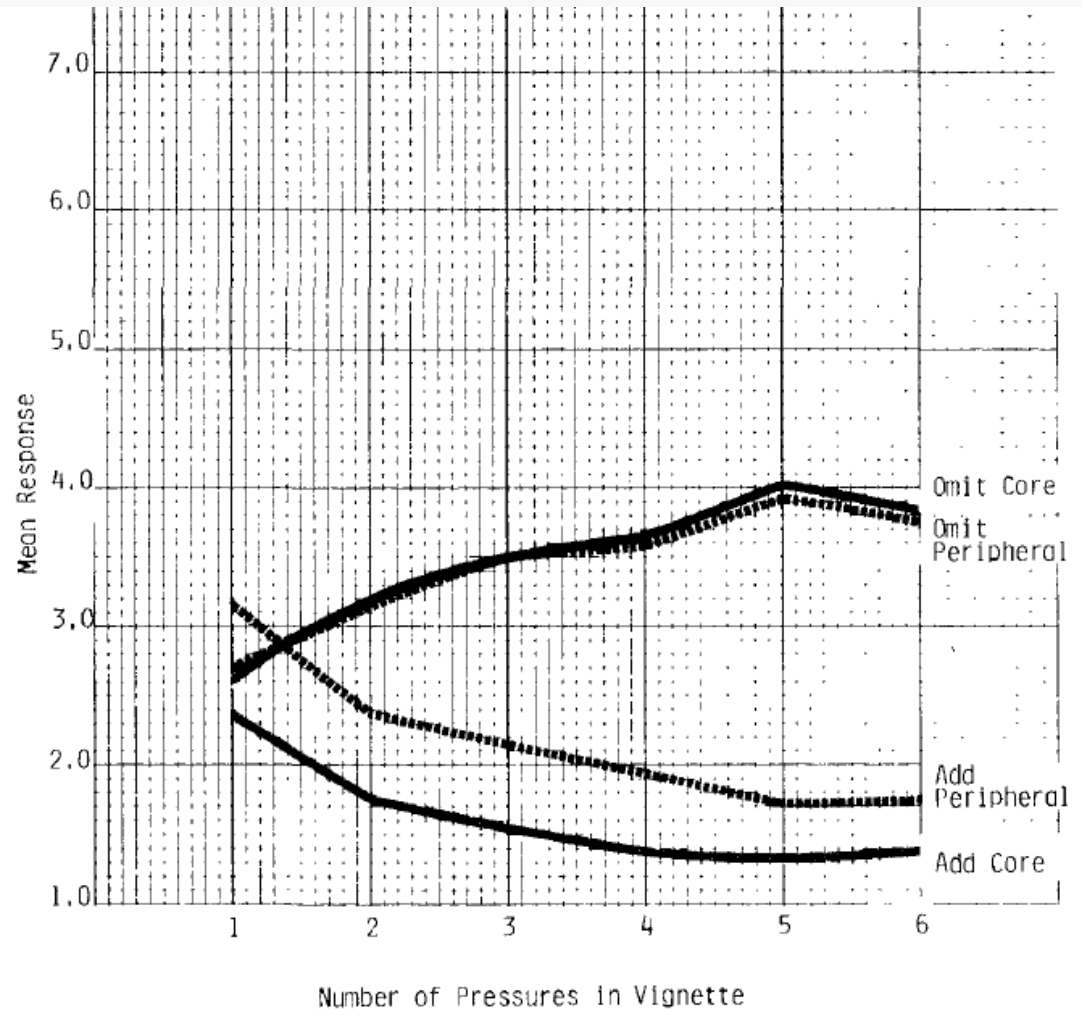


Figure 1. Relationship between mean response and number of pressures (by question).

Road Block 3

□ The language in the standards.

Write narratives to develop real or imagined experiences or events using effective technique, relevant descriptive details, and well-structured event sequences.

- a. Engage and orient the reader by establishing a context and point of view and introducing a narrator and/or characters; organize an event sequence that unfolds naturally and logically.
- b. Use narrative techniques, such as dialogue, pacing, description, and reflection, to develop experiences, events, and/or characters.
- c. Use a variety of transition words, phrases, and clauses to convey sequence, signal shifts from one time frame or setting to another, and show the relationships among experiences and events.
- d. Use precise words and phrases, relevant descriptive details, and sensory language to capture the action and convey experiences and events.
- e. Provide a conclusion that follows from and reflects on the narrated experiences or events.

2. Recognize and represent proportional relationships between quantities.
 - a. Decide whether two quantities are in a proportional relationship, e.g., by testing for equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin.
 - b. Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships.
 - c. Represent proportional relationships by equations. *For example, if total cost t is proportional to the number n of items purchased at a constant price p , the relationship between the total cost and the number of items can be expressed as $t = pn$.*
 - d. Explain what a point (x, y) on the graph of a proportional relationship means in terms of the situation, with special attention to the points $(0, 0)$ and $(1, r)$ where r is the unit rate.

Road Block 4

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□ Uncertain future of accountability

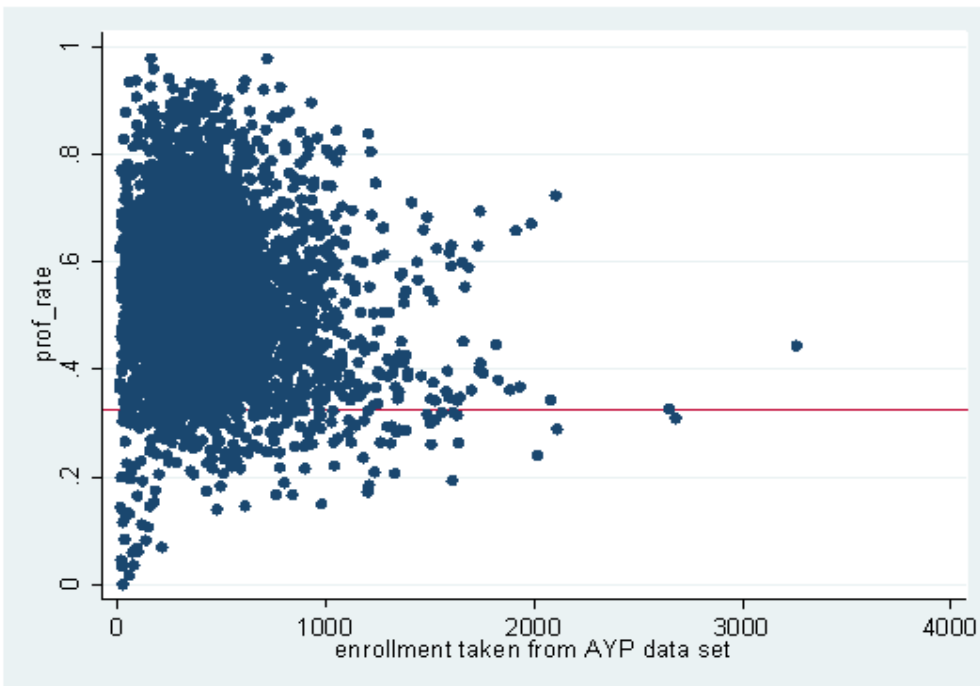


Table 2

Frequency of Achievement Gaps Causing Schools to Fall into Bottom 5%, 2004-2011

High group	Low group	Proportion
Asian	Black	1.69
Asian	Hispanic	11.01
Asian	Special Ed.	13.8
Asian	ELL	7.16
Asian	Free/red. lunch	1.81
White	Black	2.62
White	Hispanic	1.81
White	Special Ed.	20.03
White	ELL	31.92
White	Free/red. lunch	8.15

Challenge/opportunity 1

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- Textbooks and curriculum materials.
- Opportunities:
 - ▣ Gates/Pearson collaboration
 - ▣ Online/modular curriculum materials
- Challenges:
 - ▣ Common Core aligned!
 - ▣ Need more options
 - ▣ Judging quality

PEARSON

BILL & MELINDA
GATES *foundation*

Challenge/opportunity 2

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□ Next generation assessments



Partnership for Assessment of
Readiness for College and Careers

Nature of Misaligned Test Content (Proportion of Test Content That Is . . .)

Grade	N	Aligned With Standards		Over-Tested as Compared With Standards		At a Different Level of Cognitive Demand Than in the Standards		Completely Misaligned With Standards	
		M	SD	M	SD	M	SD	M	SD
ELAR									
3	6	.18	.04	.40	.17	.19	.10	.23	.14
4	9	.19	.08	.34	.16	.26	.12	.20	.16
5	8	.15	.04	.43	.17	.24	.14	.18	.17
6	7	.18	.06	.42	.20	.24	.11	.16	.16
7	5	.22	.07	.38	.24	.28	.10	.12	.14
8	9	.17	.07	.41	.18	.24	.13	.17	.17
9-12	9	.23	.06	.31	.08	.36	.17	.10	.10
Total	53	.19	.06	.38	.17	.26	.14	.17	.15

Nature of Misaligned Standards Content (Proportion of Standards Content That Is . . .)

Grade	N	Aligned With Tests		Under-Tested on The Tests		Tested at a Different Level of Cognitive Demand		Completely Misaligned With Tests	
		M	SD	M	SD	M	SD	M	SD
ELAR									
3	6	.18	.04	.11	.05	.13	.06	.58	.08
4	9	.19	.08	.12	.10	.20	.14	.48	.14
5	8	.15	.04	.07	.03	.17	.10	.60	.09
6	7	.18	.06	.12	.08	.19	.10	.51	.11
7	5	.22	.07	.19	.14	.15	.07	.43	.18
8	9	.17	.07	.14	.12	.12	.05	.56	.14
9-12	9	.23	.06	.16	.09	.18	.08	.44	.13
Total	53	.19	.06	.13	.09	.17	.09	.52	.14

Challenge/opportunity 3

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- Teacher education (pre-service and in-service)
 - ▣ Third most important lever for standards adoption?
 - ▣ The wild-and-woolly frontier; research here is close to 0
- Challenges
 - ▣ 100s of teacher ed. programs (of varying quality)
 - ▣ Many other pressures on these programs now
 - ▣ No money in pre-service teacher education

Challenge/opportunity 4

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- New advances in teacher and principal evaluation



Vanderbilt Assessment
of Leadership in Education



Gates Foundation's Measures of
Effective Teaching Project

- Also, major district reforms such as in LAUSD

Conclusion

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- So, should we be optimistic?
 - Yes:
 - The CCSS are better than prior standards
 - There are many resources mobilizing behind them
 - Should help solve textbook problems
 - No:
 - The CCSS are probably not as good as they could be
 - The support for teacher implementation is unclear
 - Good implementation is rare, runs counter to history, teacher norms, changing policy environments