

# Assessing the Value-Added Effects of Literacy Collaborative Professional Development on Student Learning

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# Current analysis

- Uses Rasch scaled measures derived from DIBELS data
- Study follows all students in kindergarten – third grade
  - Almost 10,000 students
  - 18 schools
  - Currently 3 years of longitudinal data with a 4<sup>th</sup> and final year now being collected

# Cohort design

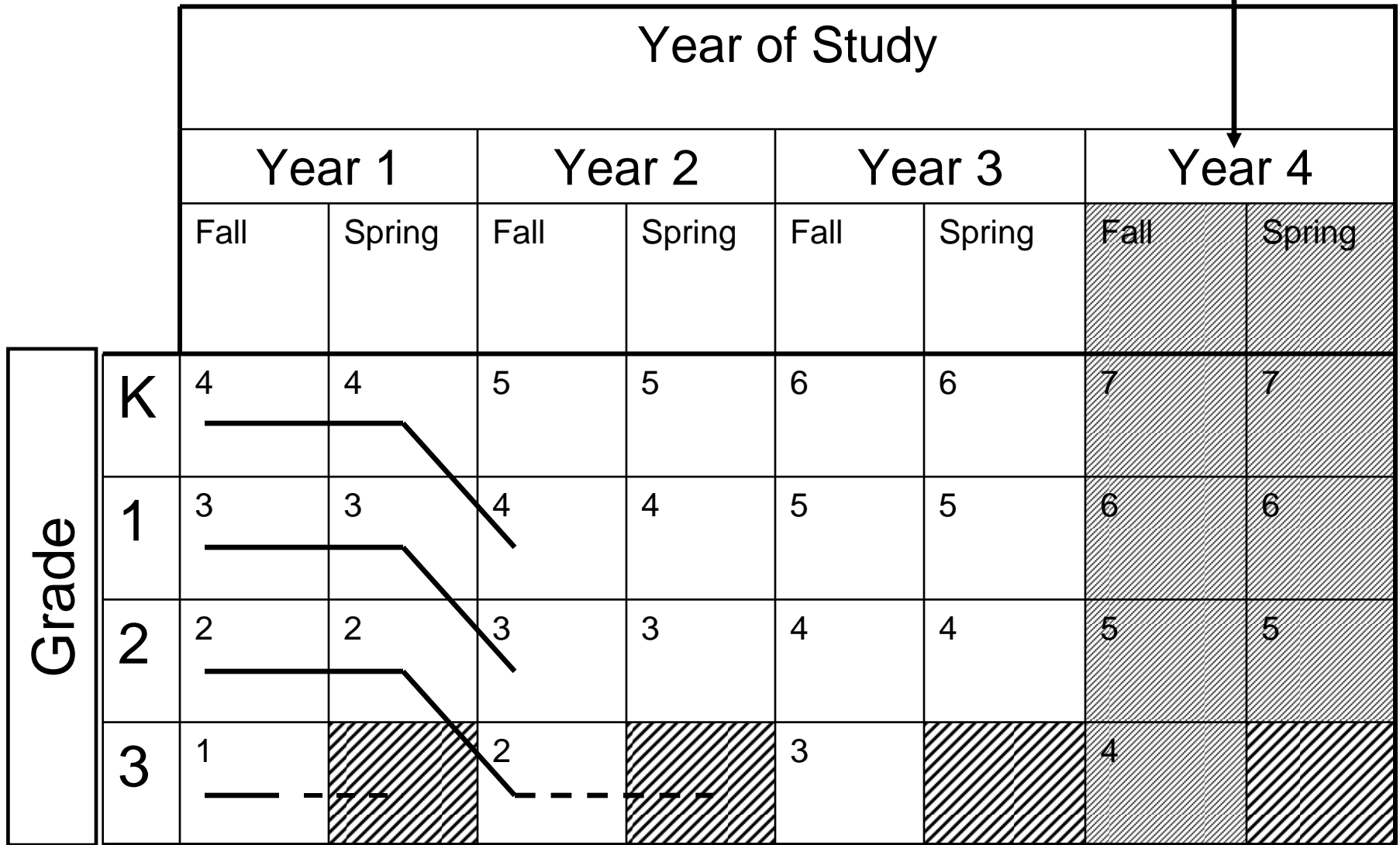
Current Year  
(SY 2007-08)

		Year of Study							
		Year 1		Year 2		Year 3		Year 4	
		Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring
Grade	K	4	4	5	5	6	6	7	7
	1	3	3	4	4	5	5	6	6
	2	2	2	3	3	4	4	5	5
	3	1		2		3		4	

Third Grade: No  
Spring DIBELS testing

# Cohort design

Current Year  
(SY 2007-08)

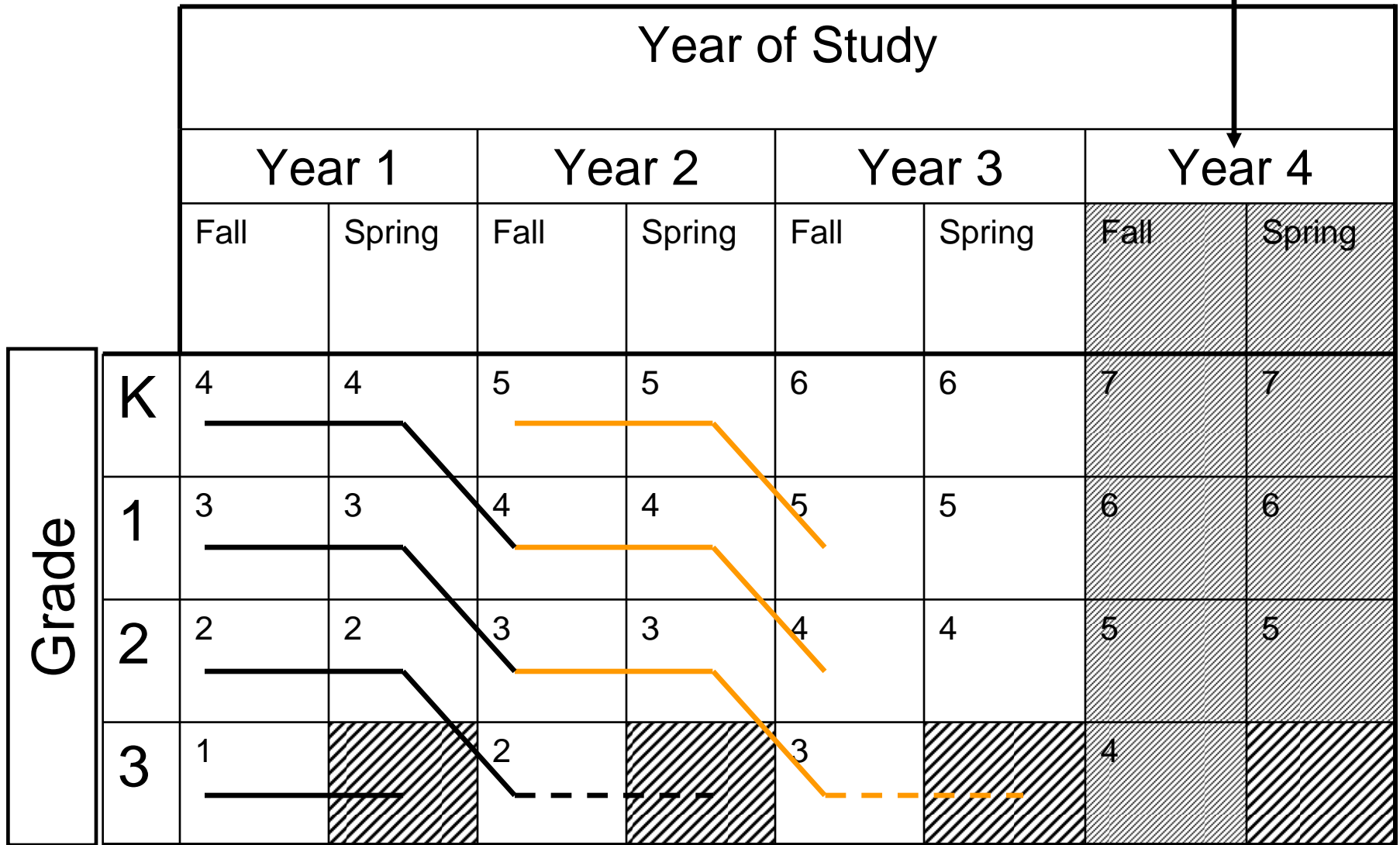


Third Grade: No Spring DIBELS testing

Baseline ———

# Cohort design

Current Year  
(SY 2007-08)



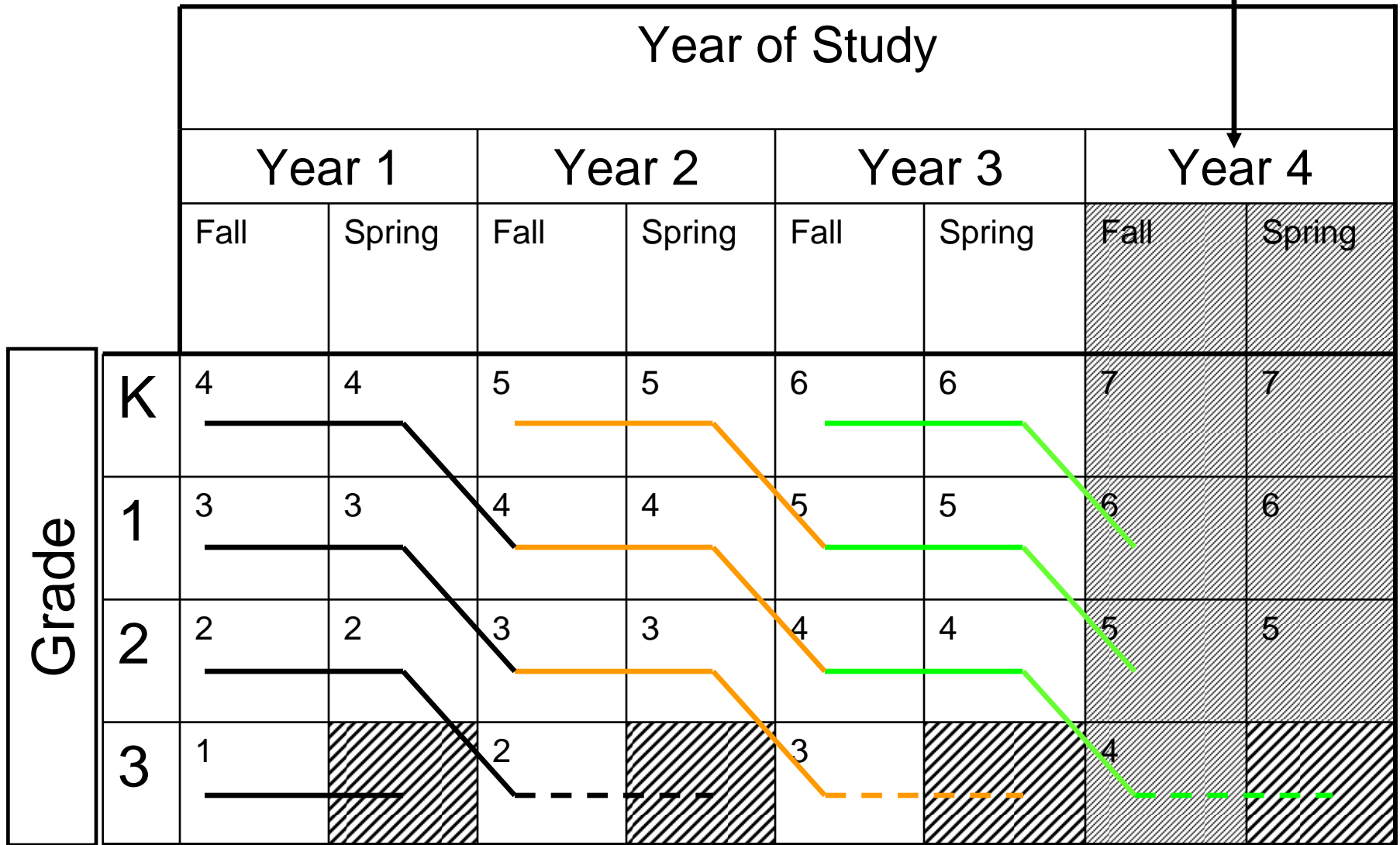
Third Grade: No Spring DIBELS testing

Baseline ———

Year 1 effects ———

# Cohort design

Current Year  
(SY 2007-08)



Third Grade: No Spring DIBELS testing

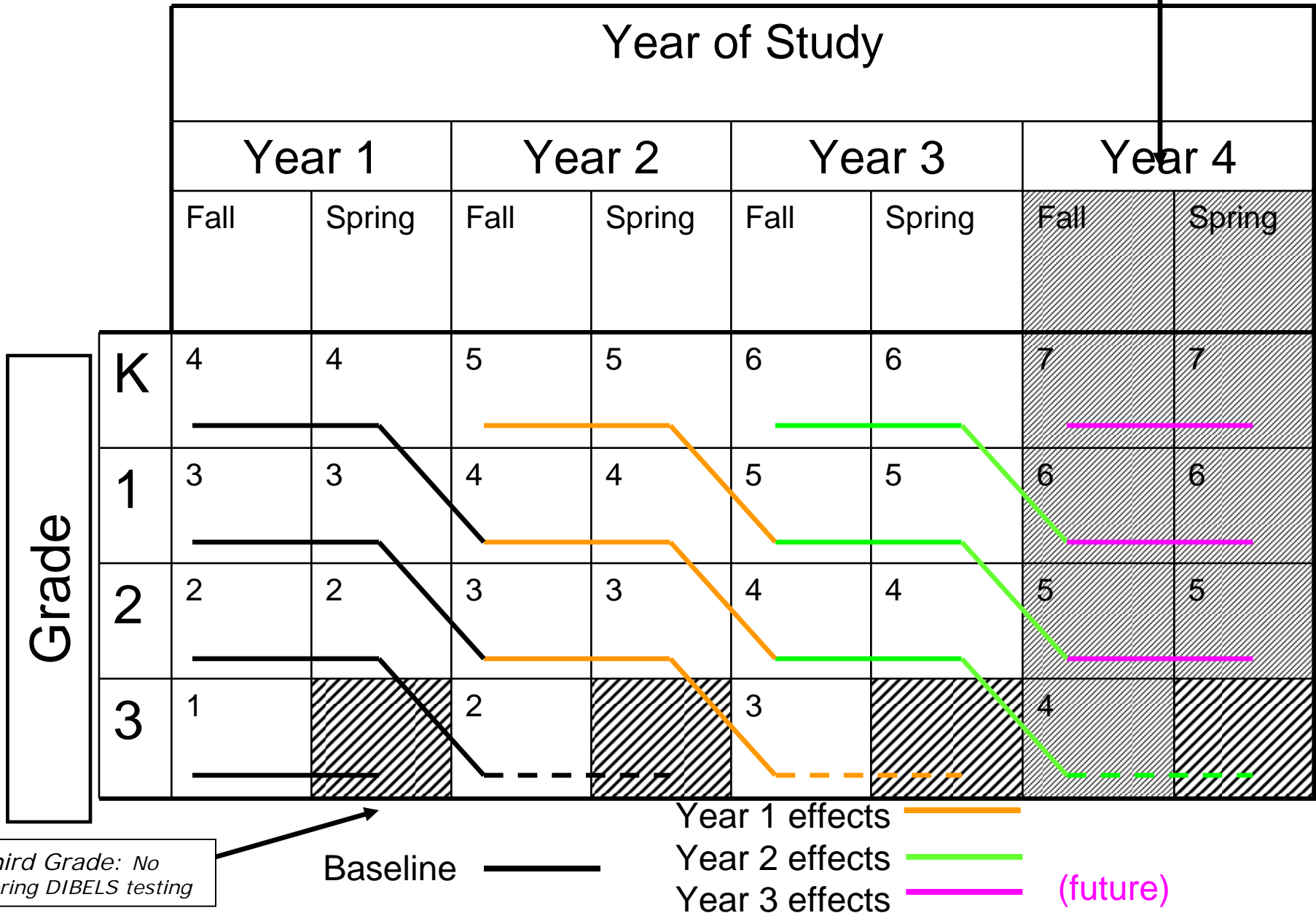
Baseline ———

Year 1 effects ———

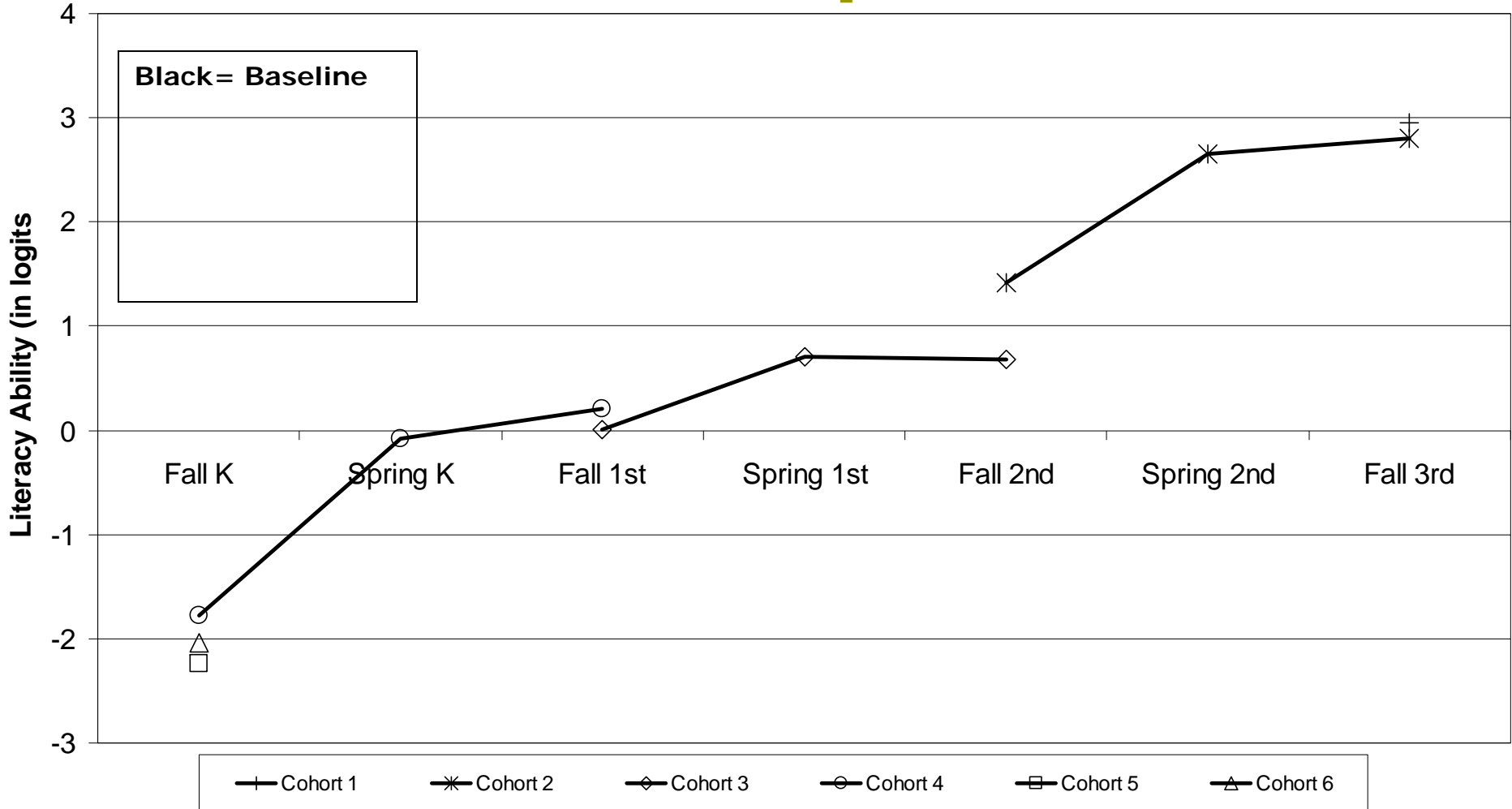
Year 2 effects ———

# Cohort design

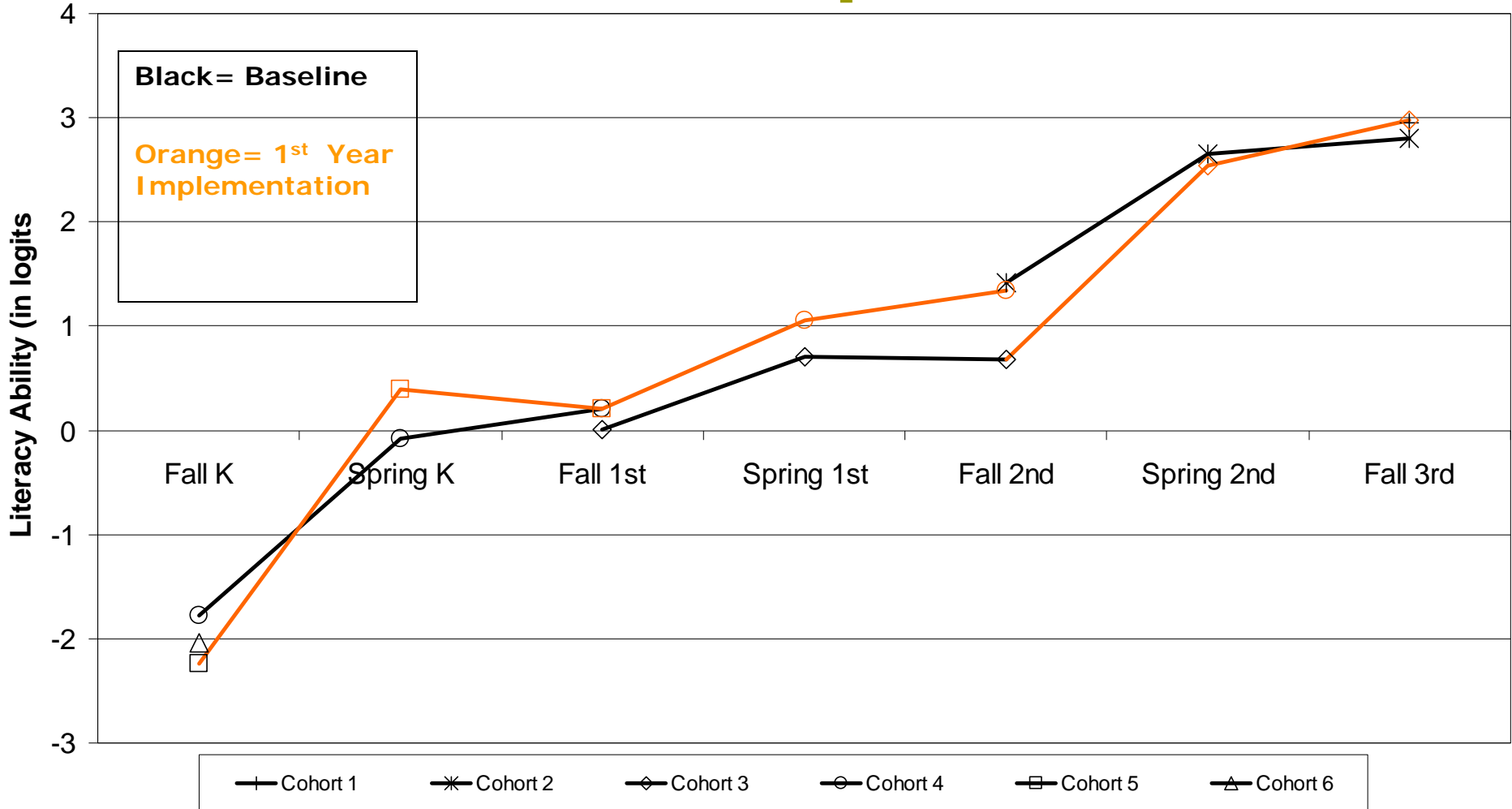
Current Year  
(SY 2007-08)



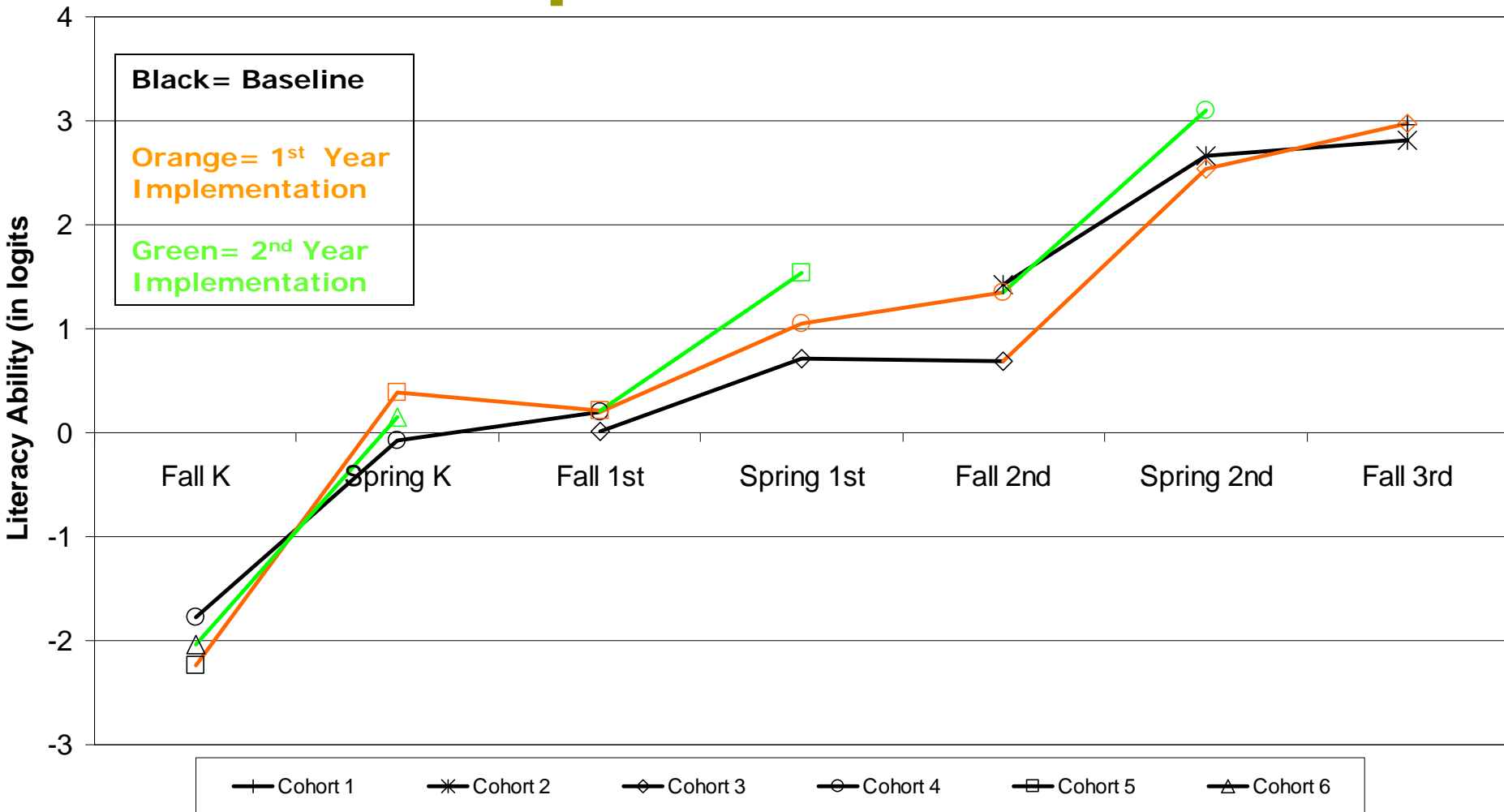
# Mean Outcomes by Cohort and Year of Literacy Collaborative Implementation



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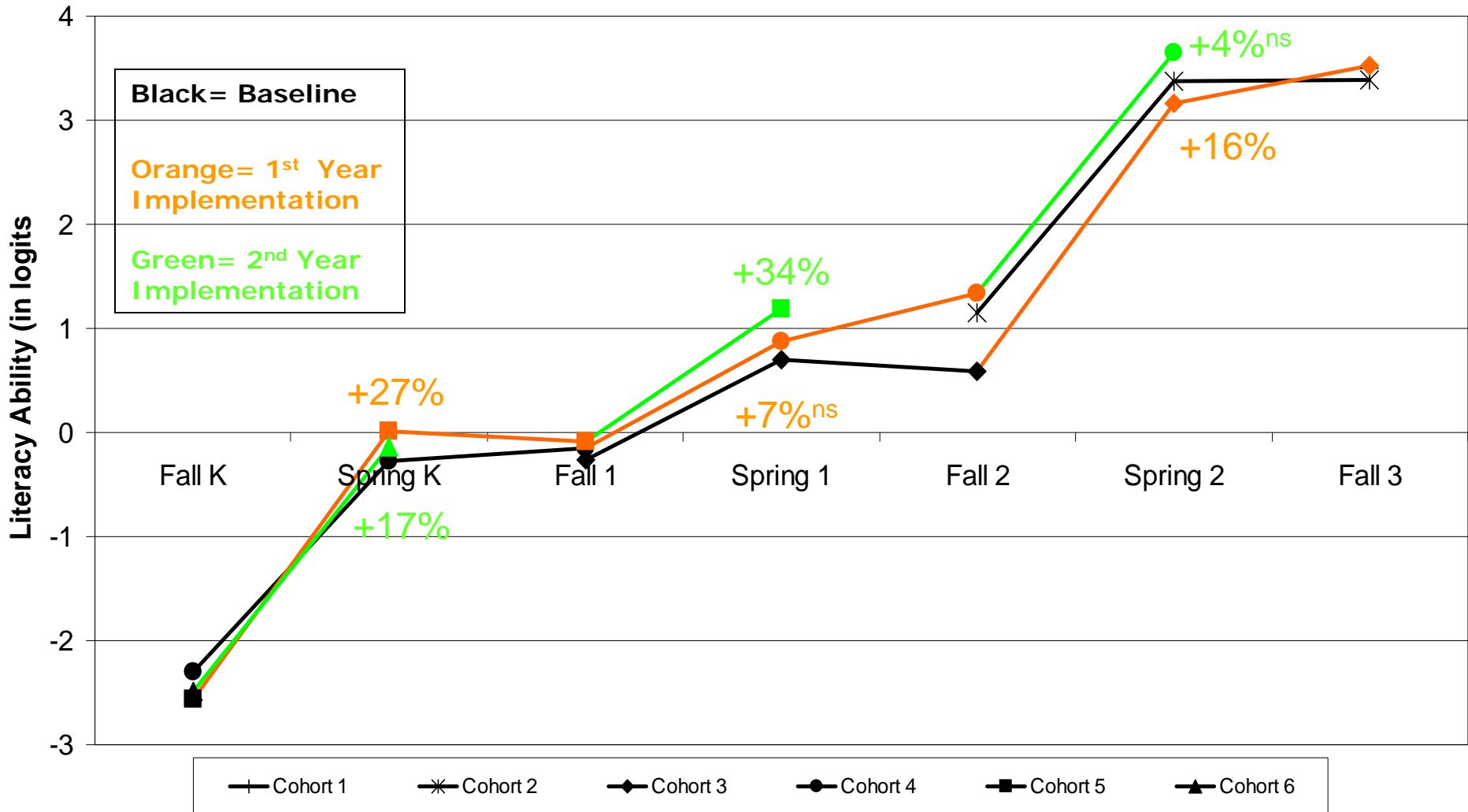
# 4-Level HLM Analysis of Overall Effects

- **Level 1:** Measurement model (weighting DIBELS scale measures by their precision)
- **Level 2:** Repeated observations over time within students (an individual growth model separating academic year and summer effects)
- **Level 3:** Students nested within schools (how student background characteristics effects growth)
- **Level 4:** Schools (how characteristics of school context and coaching activity effect growth)

# Selected Key Features of this HLM model

- **Growth model at level 2:**
  - Random initial status when each student enters data collection
  - Random learning rate during the academic year
  - Summer rate fixed for students within schools at each grade level but random across schools
  - Set of fixed effects to pick up overall measurement differences in growth across grades
- **Child level model (level 3):**
  - Set of cohort effects on the initial status
  - Year of treatment (baseline vs. year 1 vs year 2) effects on academic year learning rates and also on summer rates.
- **School level model (level 4):**
  - Random baseline (intercept, academic and summer learning rate)
  - Year 1,2 LC effects during academic year and summer.

# HLM Estimates of Average Effects by Cohort and Year of LC Implementation



# Interpretations and Caveats

- Year 2 effects in first and second grade are above and beyond year 1 effects from prior grade/year.
- These are “intent to treat effects.” Teachers are phased into PD over time.
  - 59% by the end of year 1 and 89% by the end of year 2 had initiated some LC professional development.<sup>1</sup>
- As such they may be conservative effect estimates
  - Not everyone yet involved, and
  - Degree of PD, even for those engaged, still modest.
  - Most salient results are still forthcoming.

1. Defined as having attended at least 1 workshop and participated in at least 1 coaching session

# Interpretations and Caveats

- These are quasi-experimental results
  - Major competing hypothesis: historicity effects-some other causal agent operating at the same time.
  - Possible though probably unlikely. Literacy Collaborative is the major commitment in to improving K-2 literacy achievement in these schools.
  - One would have to argue that the effects we are observing are being caused by some secondary initiative and with sufficient prevalence in 18 schools across 12 states to produce these aggregate effects....

# Analyses Still Ahead

- Investigating relationships of student background to differences in individual growth rates
- Examining effects of variation in amount and quality of LC activity on differences in school level program effects on academic year growth (extending the causal warrant by linking papers 2 and 4)
- Probing observed differences in summer effects
- Moving down to the classroom level
  - a full value-added model (cross-multilevel random teacher and school effects)
  - Probing the causal cascade

**Thank you!**

A full set of papers will be available at  
[www.usird.org](http://www.usird.org) and at [www.irepp.stanford.org](http://www.irepp.stanford.org)