

High quality interactions in early childhood education



Catherine E. Snow

Patricia Albjerg Graham Professor
Harvard Graduate School of Education

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Education and the accumulation of knowledge



- The exception rather than the rule
- Structural challenges to institutionalization of improvements
- Short-term solutions the enemy of cumulative progress
- Review of prior ProLEER meetings as an antidote

A brief reprise of the argument



- Children need high quality ECE to thrive
- Many of our countries/educational systems struggle to provide public ECE of high quality
 - With the result that SES gaps grow
- Major policy levers have been standards and benchmarks, which are weak even if not misguided

But we have made progress



- Play vs. teach argument largely resolved
- Widespread recognition of need for well-prepared teachers
- Some progress on PD design and delivery
- Demonstration of effective practices
- Development of useful materials
- Some excellent curricula
- Growing evidence of effectiveness in EC

Jenya Kholoptseva

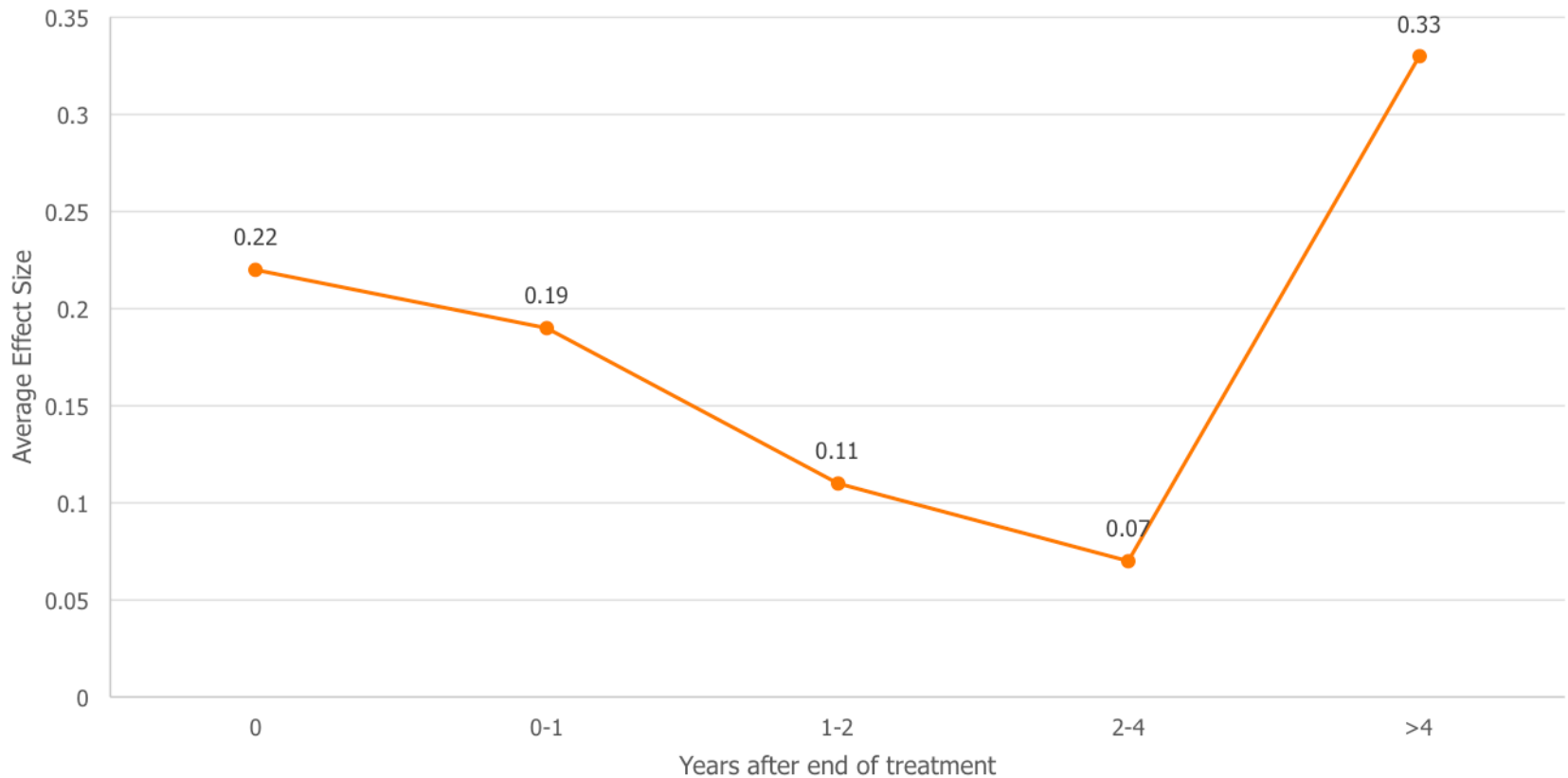


Effects of Center-Based Early Childhood
Education Programs on Children's
Language, Literacy, and Math Skills

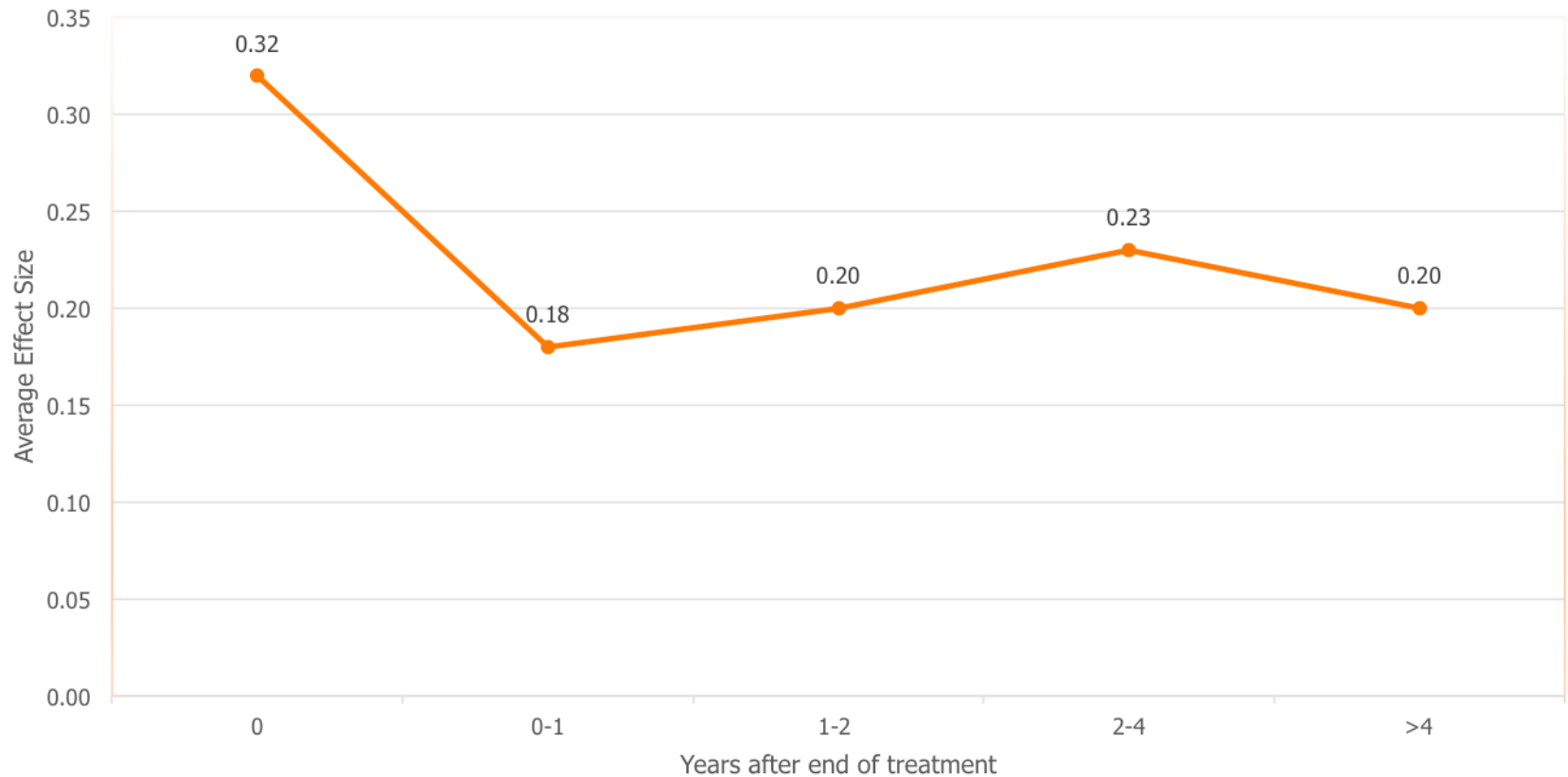
Meta-analytic study

2016 HGSE dissertation

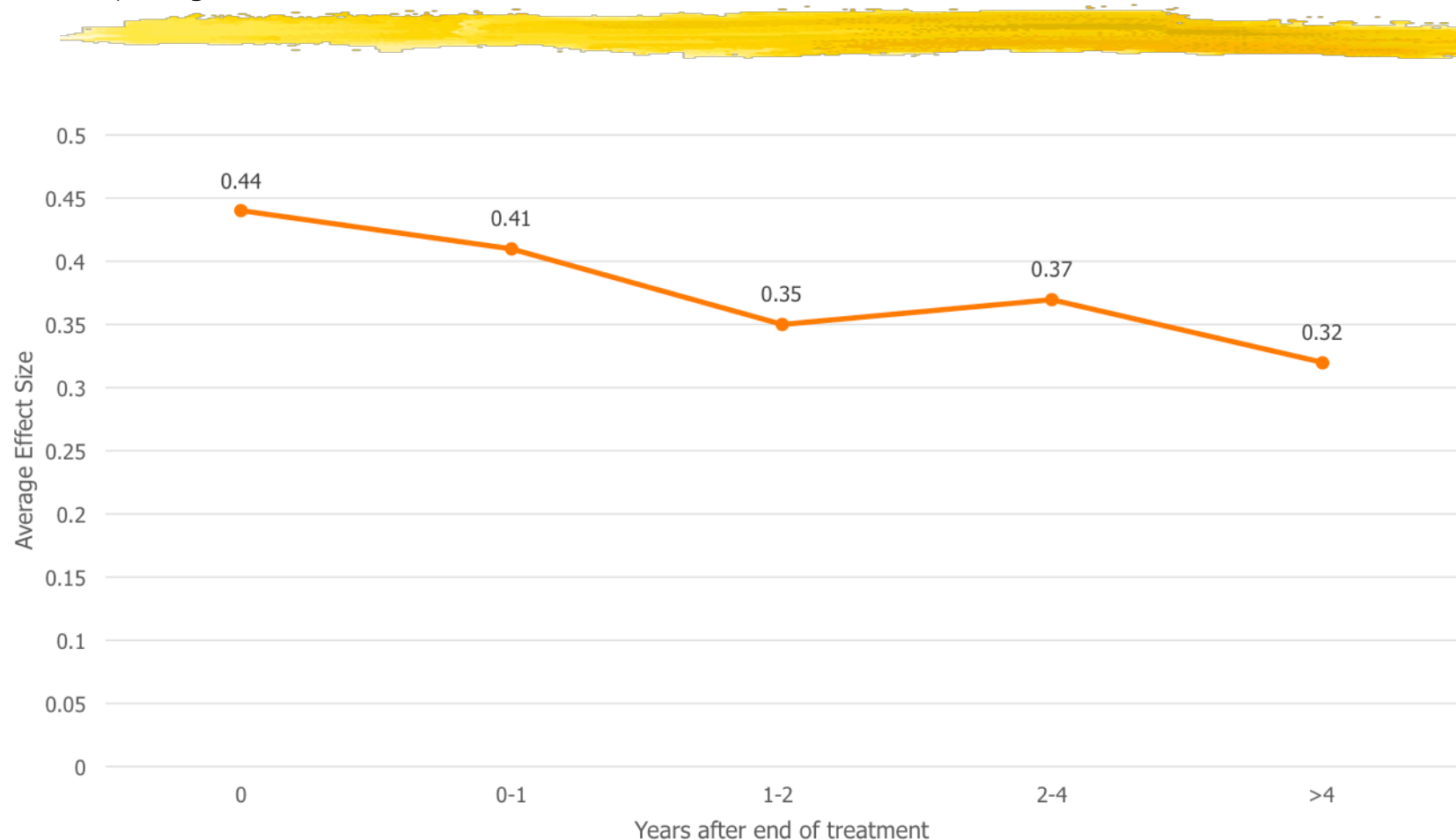
Average effect sizes by years after the end of treatment for vocabulary outcomes. Data are based on the following number of studies: 0 years since end of treatment=16 studies; 0-1 years after end of treatment=13 studies; 1-2 years after end of treatment=5 studies; 2-4 years after end of treatment=5 studies; >4 years after end of treatment=3 studies.



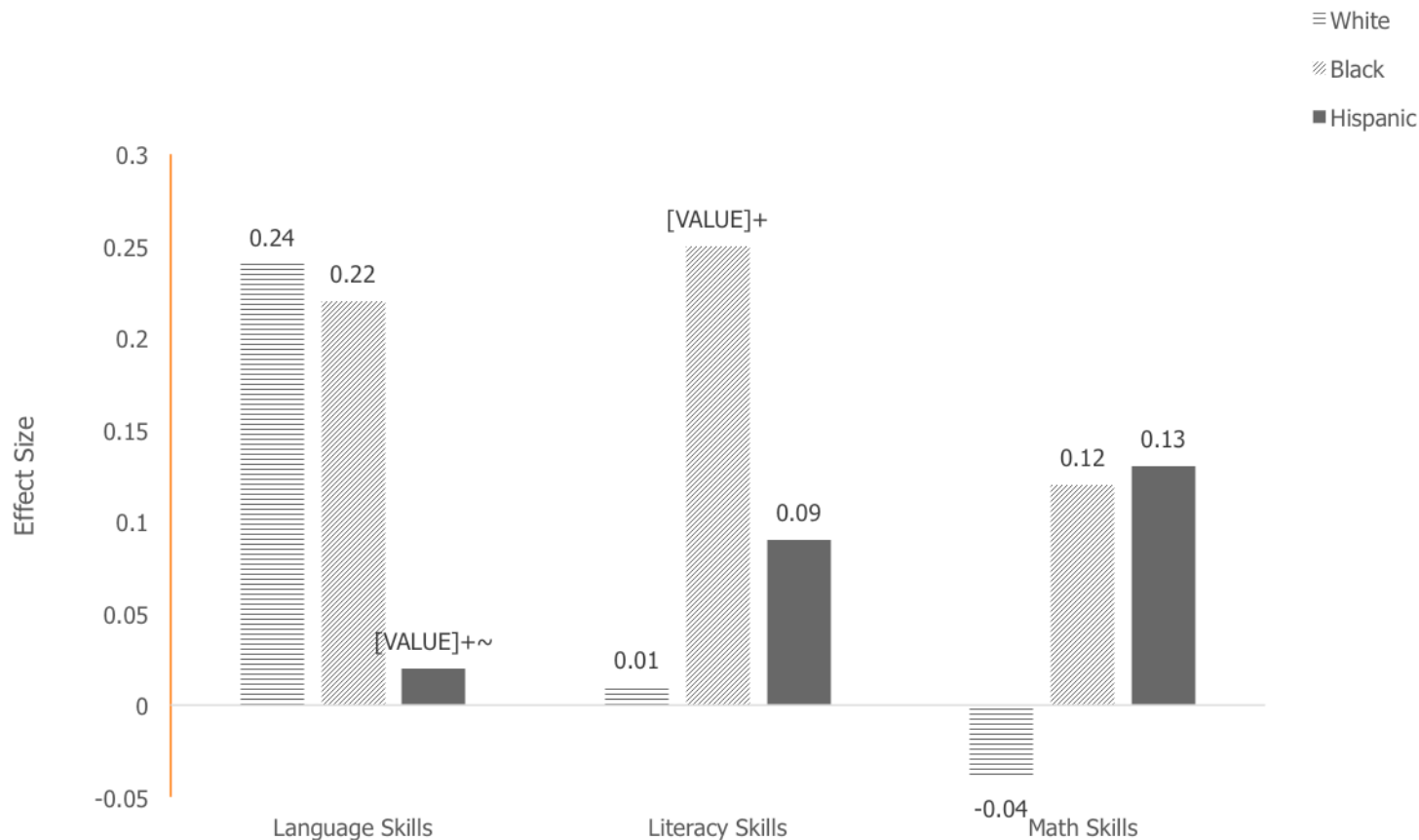
Average effect sizes by years after the end of treatment for language comprehension and production outcomes. Data are based on the following number of studies: 0 years since end of treatment=19 studies; 0-1 years after end of treatment= 33 studies; 1-2 years after end of treatment=7 studies; 2-4 years after end of treatment=10 studies; >4 years after end of treatment=3 studies.



Average effect sizes by years after the end of treatment for early reading outcomes. Data are based on the following number of studies: 0 years after end of treatment=5 studies; 0-1 years after end of treatment= 6 studies; 1-2 years after end of treatment=5 studies; 2-4 years after end of treatment=9 studies; >4 years after end of treatment=6 studies.



Average effect sizes for language, literacy, and math skills, by children's race or ethnicity. + denotes that there were statistically significant differences between the average effect for a racial/ethnic group and White children. ~ denotes that there were statistically significant differences between the average effect for a racial/ethnic group and Black children.



And have we accumulated knowledge at ProLEER?



- ECE programs are expanding everywhere
- Quality is variable, yet crucial to positive outcomes
- PD and teacher preparation are important inputs
- Children learn more if they can talk more

And have we accumulated knowledge at ProLEER?

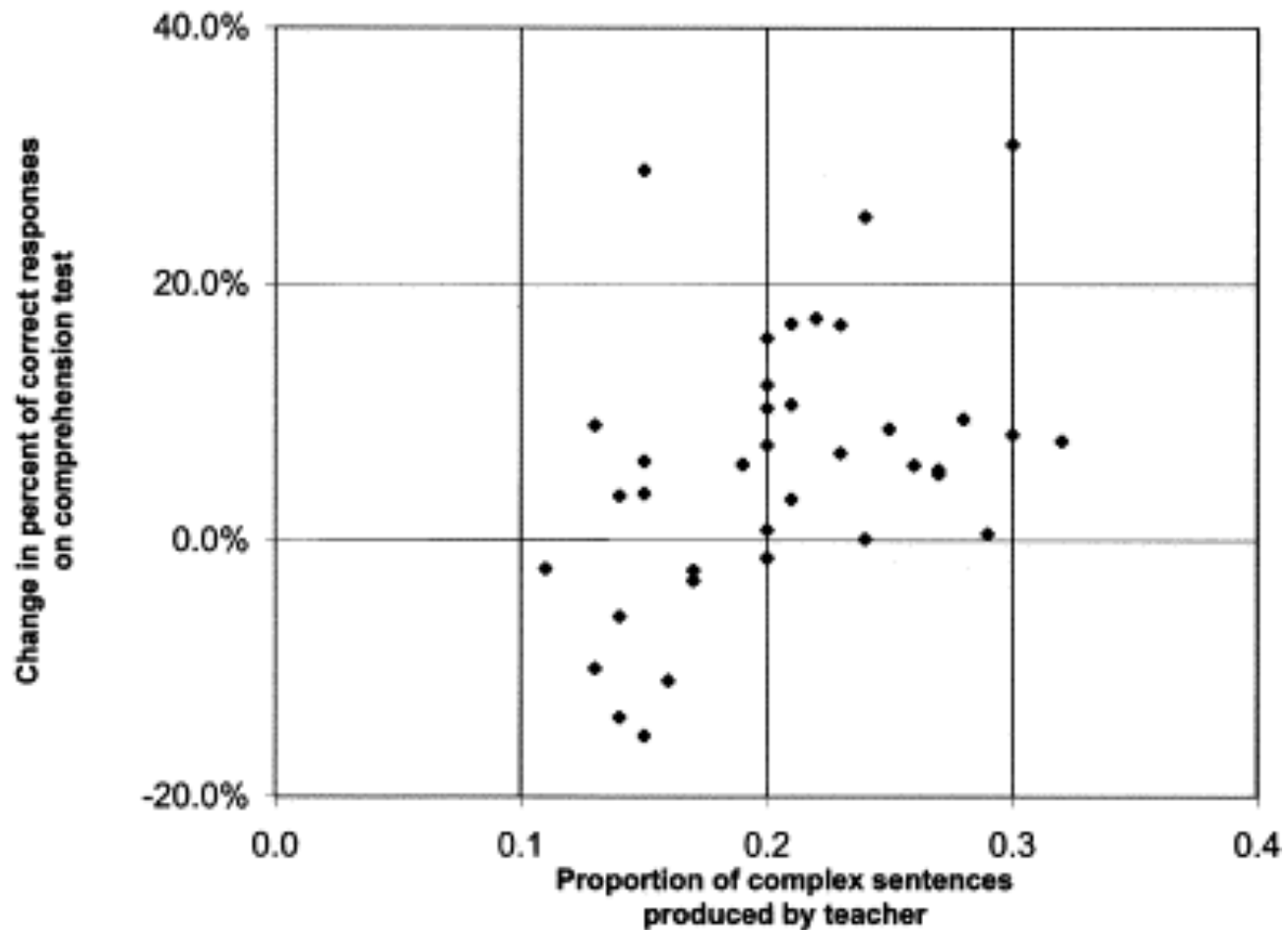


- 30 million word gap is really a knowledge gap
- EC curriculum together with PD can improve child outcomes (BPS/OWL)
- Children's curiosity is a powerful source of learning
- Children need more chances to talk
- Quality of teacher talk is key

Huttenlocher et al. (2002)

- 40 classrooms from 17 preschools, Chicago
- Child SES predicted comprehension pretest ($r = .48$)
- Mean class growth in comprehension not related to SES
- Classroom factors predicted growth in comprehension:
 - Proportion of complex (multiclaue) utterances in teacher talk ($r = .42$)
 - Overall rating of teaching quality ($r = .32$)
- BUT in a regression teacher syntax explained much more variance (18% vs 4%)!

Fig. 8. The relation of the proportion of complex sentences in teacher speech to change in comprehension scores (Huttenlocher et al., 2002).



The facts



- Three different teacher talk predictors
 - Extended discourse
 - Vocabulary diversity
 - Syntactic complexity
- Actually all aspects of the same strategy – talk about interesting things in interesting ways

Lily Wong Fillmore's Juicy Sentences



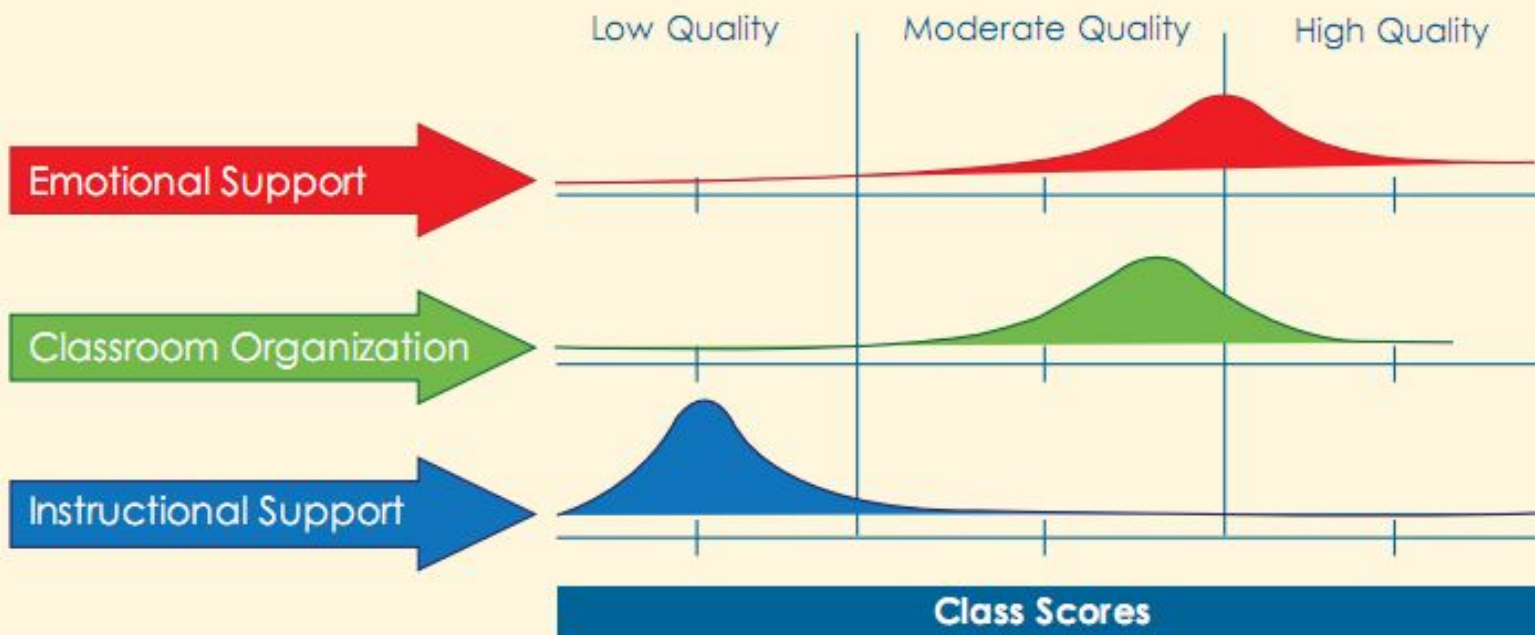
- Usable at all ages
- Highly targeted close reading
- But collaborative
- First developed for ELLs
- Promising more broadly

And have we accumulated knowledge at ProLEER?



- The CLASS is a useful tool for measuring EC quality
- The CLASS reveals widespread challenges with instructional quality
- Good curricular materials can raise CLASS scores
- Good PD can raise CLASS scores
- CLASS does not perfectly predict child outcomes

Average Ratings of Interactions in Pre-K - 3rd Classrooms



CLASS in Chile



- https://www.youtube.com/watch?v=QS9LRA5vJ0c&feature=youtu.be&list=P_L_wlLBUxs8f6wboV65cL3cwzztDhnXijP

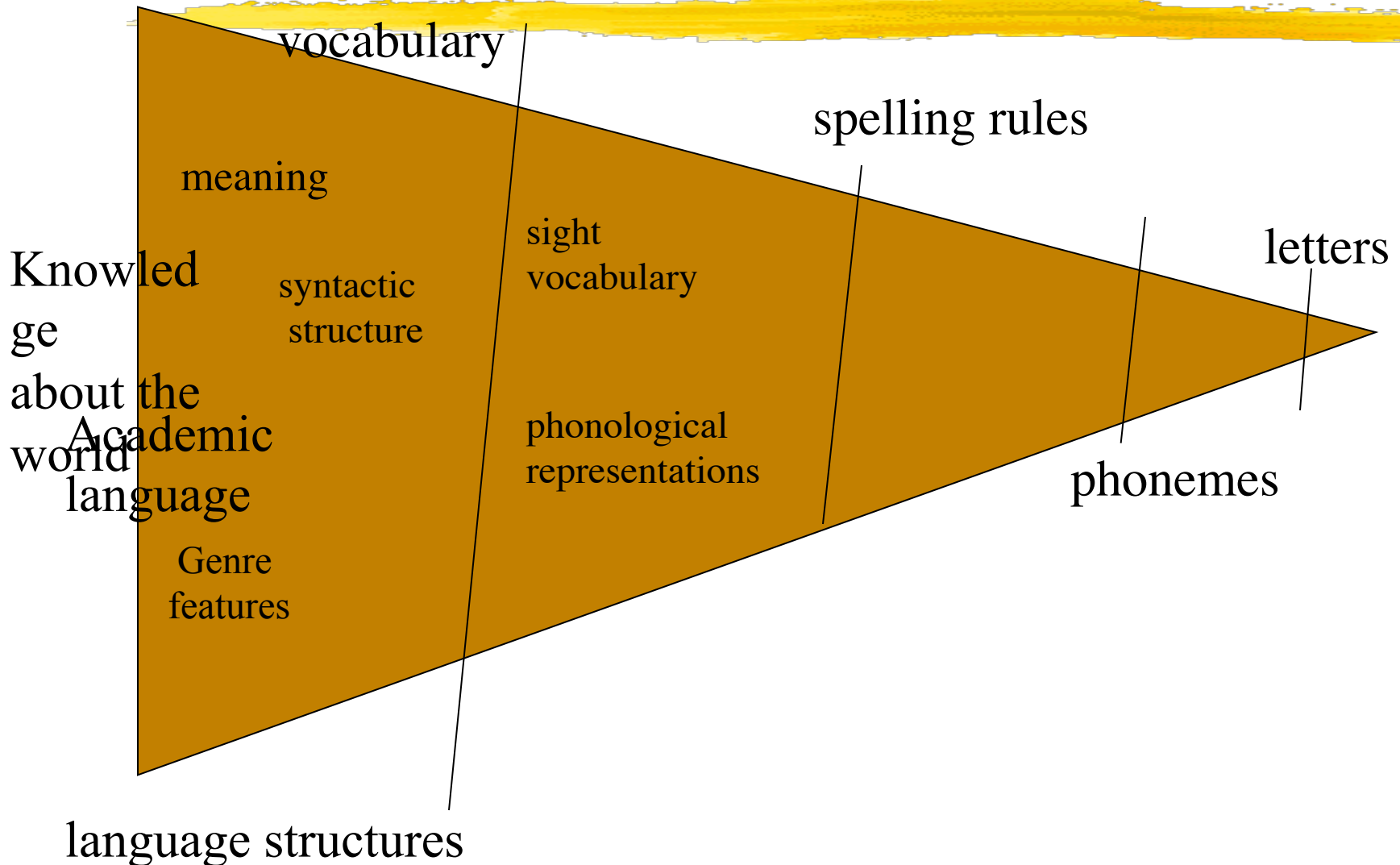
What about actual reading?



- Obviously crucial
- But a little risky to concentrate on it too much

**Large problem spaces
Need strong
language support**

**Small problem spaces:
need less support,**



Adapted from Snow (2007)

Ultimately, then...



- It is all about the interaction in the classroom
- Quality of teacher talk and of teacher-child interaction systematically trump other inputs
- And those are really hard to change – especially from the outside

Who can solve this problem?



- Those who confront it every day?
- John Heysham Gibbon and the heart-lung machine
- Ridhi Tariyal and the tampon of the future
- Vivian Gussin Paley and the story-telling story-acting practice in kindergarten

Inventology



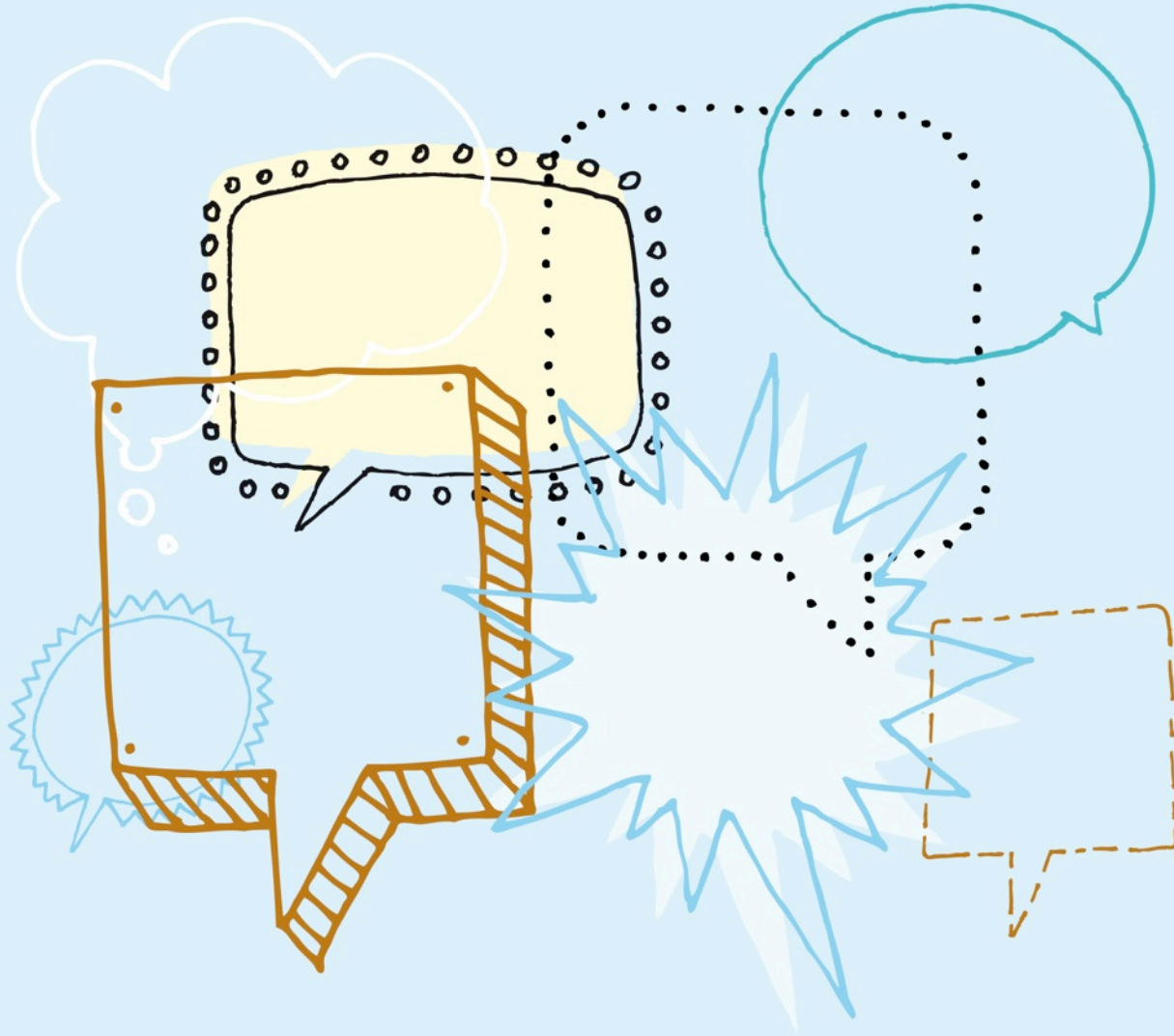
- Eric von Hippel, MIT
- Lead users are the best innovators
- The internet synergizes the contributions of lead users
- Commercial producers constrain the system rather than galvanizing it

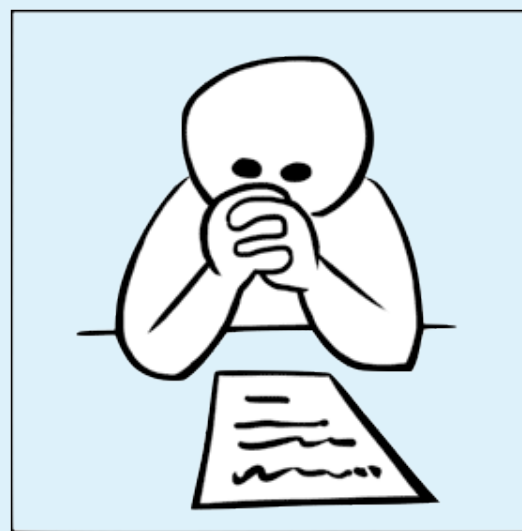
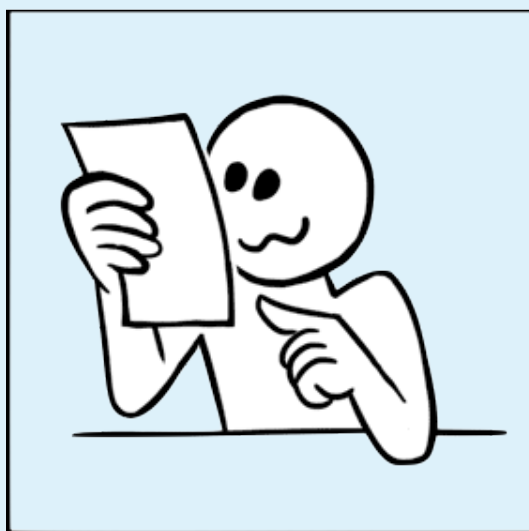
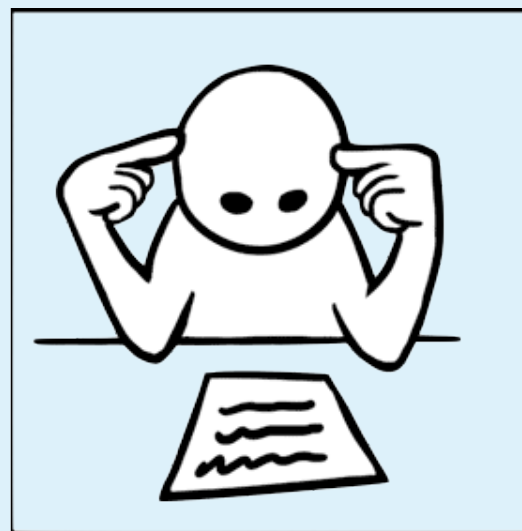
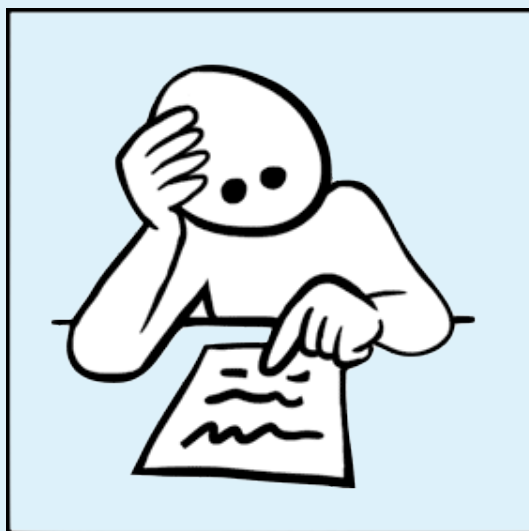
Practice Embedded Educational Research (PEER)

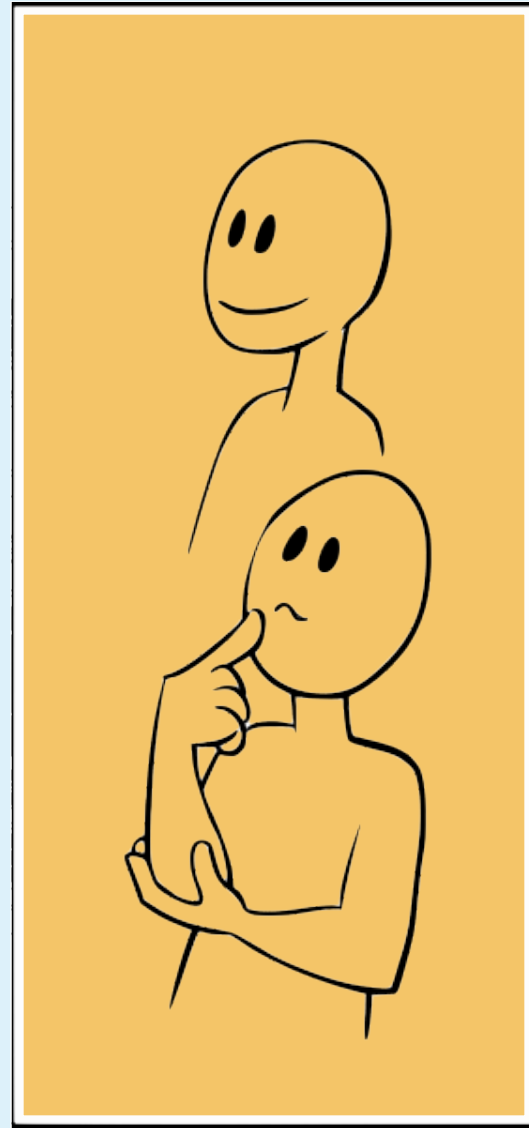
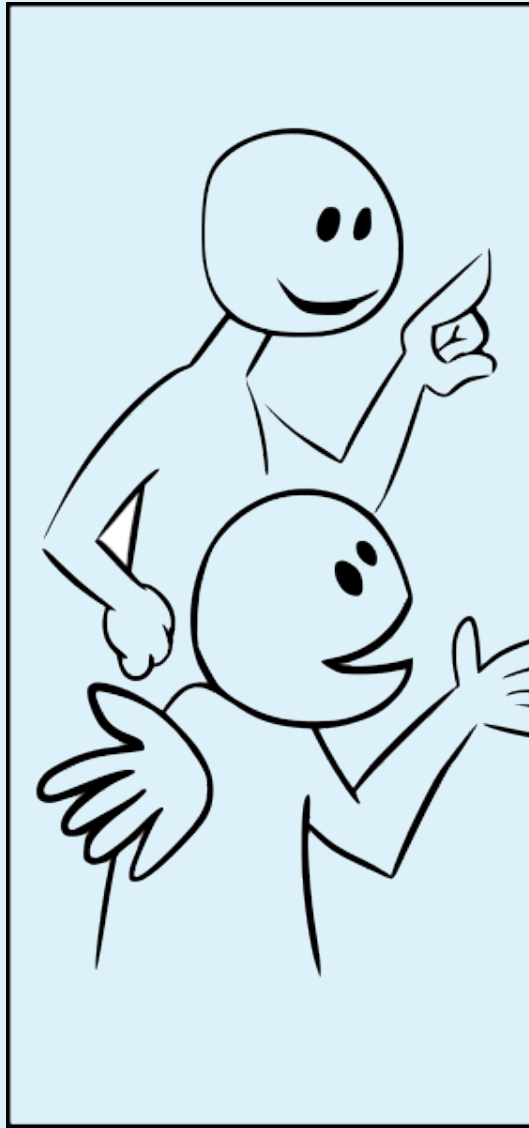


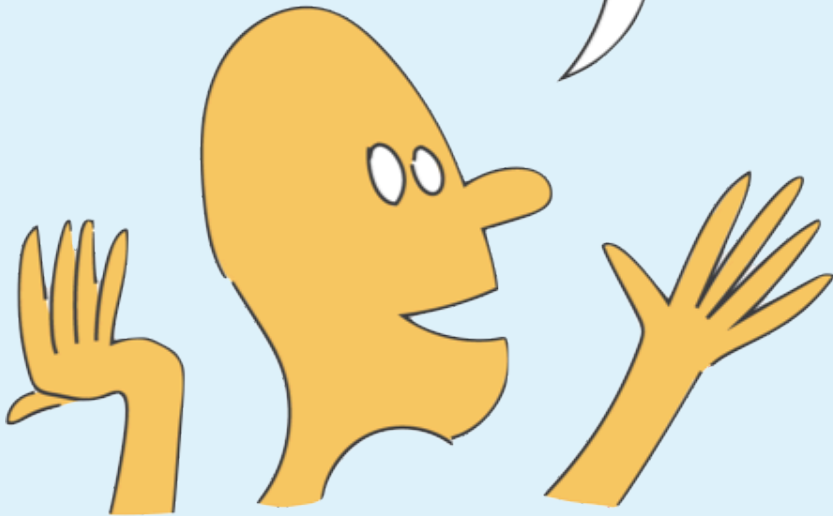
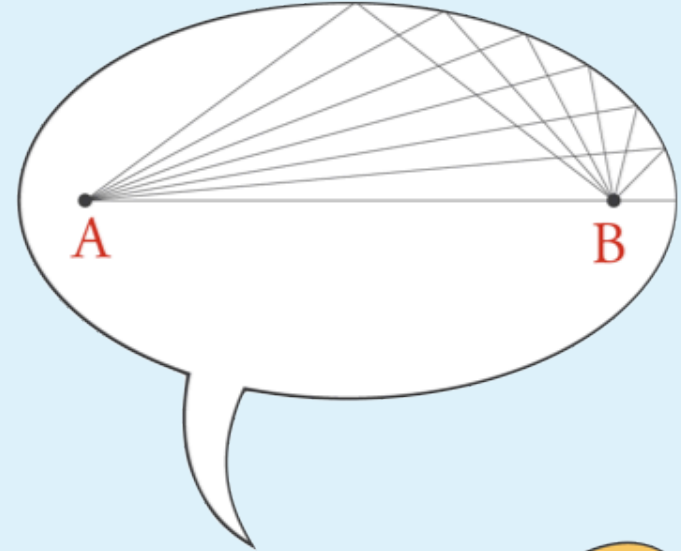
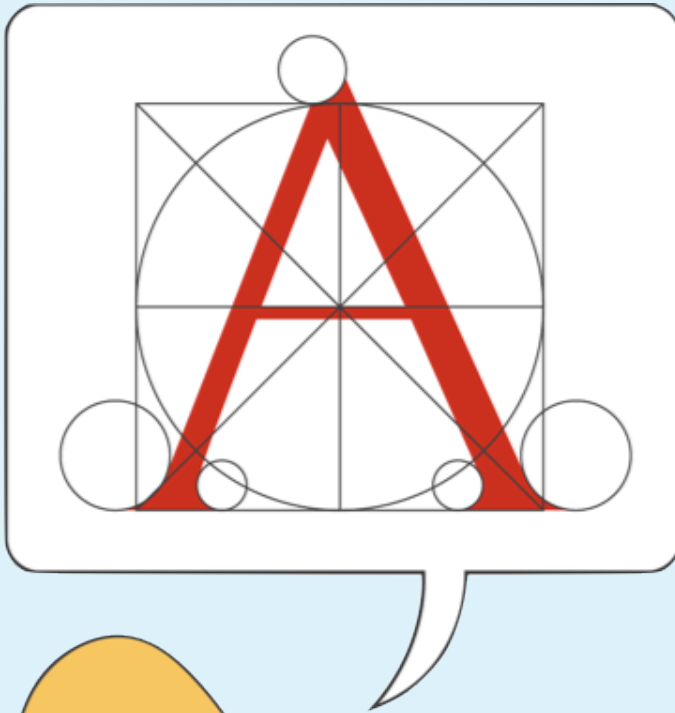
- Inventology in education

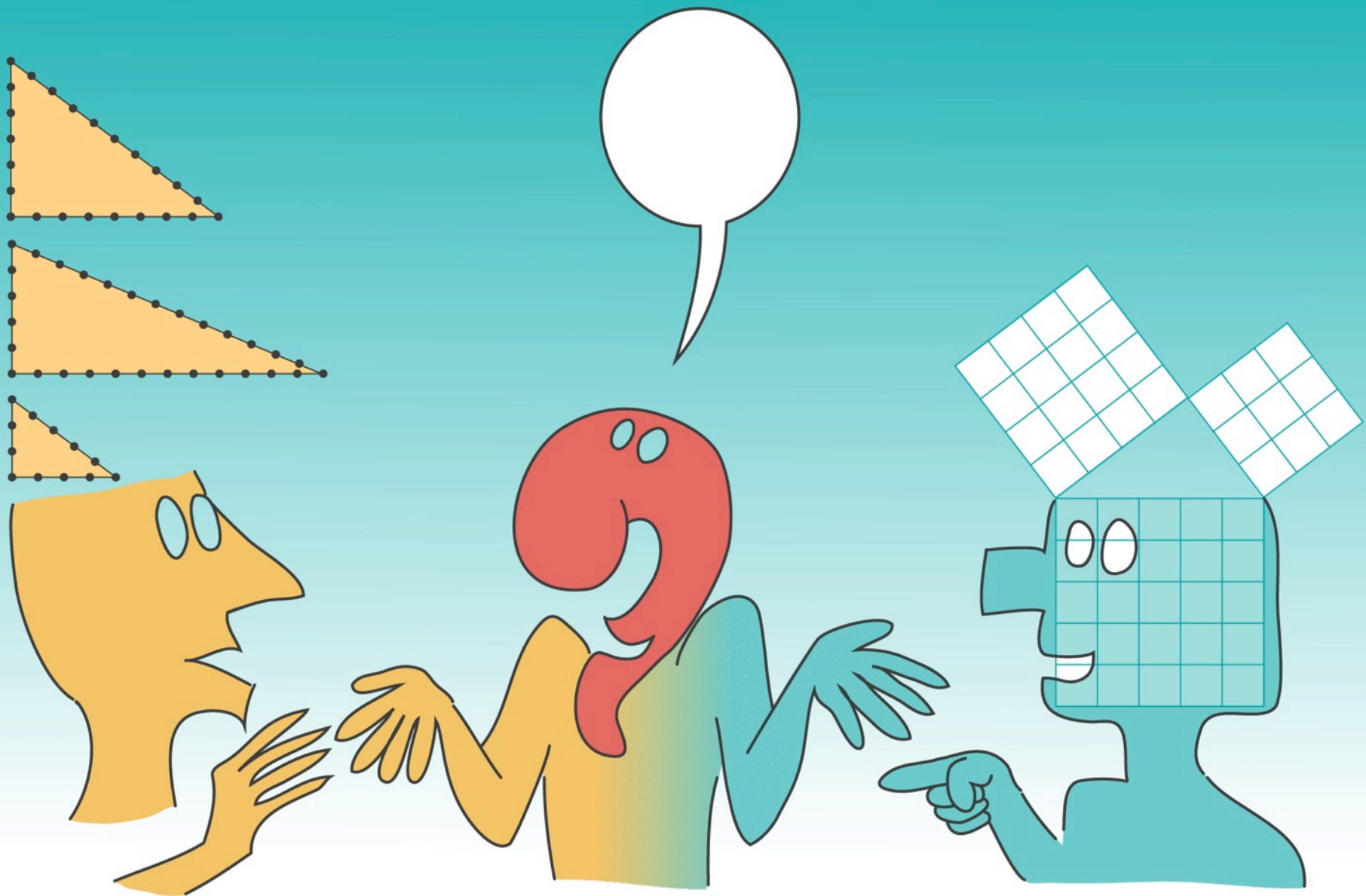
Catalyzing Comprehension through Discussion and Debate

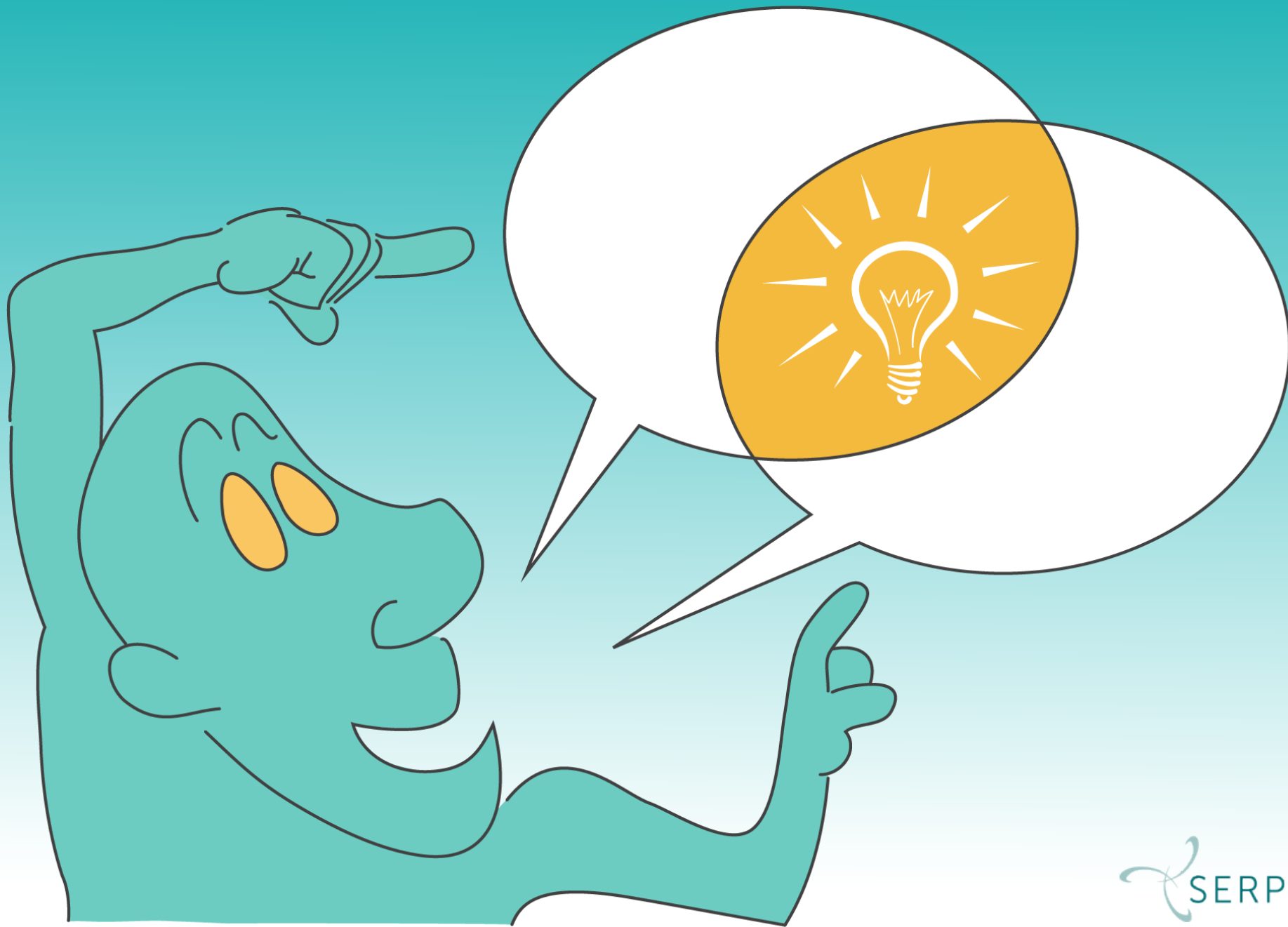












word

generation

**Join the National
Conversation!**

stari

Strategic Adolescent
Reading Intervention



WordGen
WEEKLY

-72 one-week
interdisciplinary
units for middle
school

SHOULD A STANDARDIZED TEST BE A REQUIREMENT FOR HIGH SCHOOL GRADUATION?

UNIT 2.01

USE THE FOCUS WORDS

standardized (adjective) the same for everyone
 Sample Sentence: In many states, high school students take a **standardized** test.
 Turn and Talk: Should there be a **standardized** test?

assess (verb) to judge the quality of; to evaluate
 Sample Sentence: Many tests **assess** student learning.
 Turn and Talk: How do you **assess** whether a test is fair?

criteria (noun) standards or rules used to make a decision
 Sample Sentence: Keisha met all the **criteria** for graduation.
 Turn and Talk: What are your **criteria** for a good test?

correspond (verb) to match
 Sample Sentence: Standardized tests **correspond** to state standards.
 Turn and Talk: Do you think your grade **corresponds** to your test score?

formulate (verb) to invent by thinking about something
 Sample Sentence: Each year testing officials **formulate** new tests.
 Turn and Talk: Do you **formulate** test questions?

Word Generation
UNIT 2.01 | standardized | assess | criteria | correspond | formulate

This week's issue:
SHOULD A STANDARDIZED TEST BE A REQUIREMENT FOR HIGH SCHOOL GRADUATION?

Many state laws require that high school students pass a **standardized** test to graduate. These laws are passed to make sure high schools challenge their students. Businesses often complain that high school graduates cannot read and do math needed on the job. Colleges worry that not all high school graduates can do college work. The tests are used to see who has the skills expected by employers and colleges.

Standardized tests **assess** students' ability to write, read critically, and do challenging math. The tests are geared to the skills people need in jobs and in college. Supporters say standardized testing is fair because all students are graded using the same **criteria**. For example, writing might be graded by how many examples the students give.

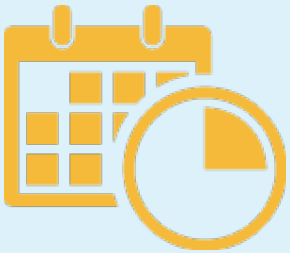
Some people think graduation tests are unfair to students who are learning English. These students might know the information but have trouble understanding the test questions. Other students might have trouble focusing their attention. Their test scores might not show what they really know.

Students in different schools learn different things. The standardized test might not **correspond** to what some students were taught in a particular school. Students in another school, however, might find the test matched what they learned in class, which some people argue isn't fair.

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Conversation!**



**WordGen
WEEKLY**



**Social Studies
Generation**



**Science
Generation**



**Word Generation
ELEMENTARY**



Social Studies Generation

- 18 one-week social studies units for middle school



deduce • methodical • legacy • descend • root • myth • tactic

SoGen Unit 6.4

social studies



generation

THE LEGACY OF ALEXANDER THE GREAT: GREAT LEADER OR POWER-HUNGRY TYRANT?



© 2015 SERP



order • proposal • value • oppressive • revolution • stability

SoGen Unit 6.1

social studies



generation

THE PHARAOHS OF ANCIENT EGYPT: OPPRESSORS OR GREAT LEADERS?



SOCIAL STUDIES ACTIVITIES

Session 1 Reader's Theater Identifying Different Perspectives and Support	2-3
Session 2 Building Background Knowledge Class Discussion	4-7
Session 3 Understanding the Pharaohs	8-10
Session 4 It's Debate Time!	11-12
Session 5 Writing	13-14

SUPPLEMENTARY ACTIVITIES FOR OTHER CONTENT AREAS

ELA Passage for Analysis and Discussion	15
Math Mathematics with Knotted Ropes	16
Science Dressing for Safety?	17

FOCUS WORDS

Examining the Focus Words Closely	18
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native • population • interdependence • disturbance • recovery • consumer • predator • prey

SciGen Unit 7.4

SCIENCE



generation

POPULATIONS IN BALANCE



claim • evidence • plausible • result • pattern • interpret

SciGen Unit 6.3

SCIENCE



generation

CAN YOU REALLY CLAIM THAT?

SCIENCE ACTIVITIES

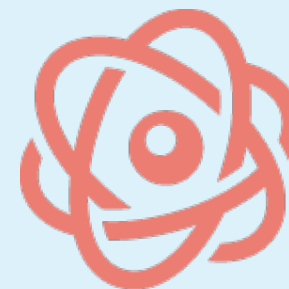
Session 1 Reader's Theater Questions About the Reading	2-3
Session 2 Examining Claims	4-7
Session 3 In the Lab	8-10
Session 4 Meeting of the Minds	11-12
Session 5 Writing	13-14

SUPPLEMENTARY ACTIVITIES FOR OTHER CONTENT AREAS

ELA Passage for Analysis and Discussion	15
Math Problems of the Week	16
Social Studies Historical Perspective	17

FOCUS WORDS

Examining the Focus Words Closely	18
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Science Generation

- 18 one-week science units for middle school



nutrition • effective • eliminate • campaign • respect

UNIT 4.03

word

generation

WHO SHOULD DECIDE WHAT WE EAT?

SCHEDULE



recent • divisive • consider • propose • funds • resolve

UNIT 5.04

word

generation

WHAT DIVIDES US AND HOW CAN WE RESOLVE OUR DIFFERENCES?

SCHEDULE

Day 1
Action News
Reader's Theater

Day 2
Characters' Perspectives

Day 3
Word Study

Day 4
Journals and Journeys

Day 5
Article

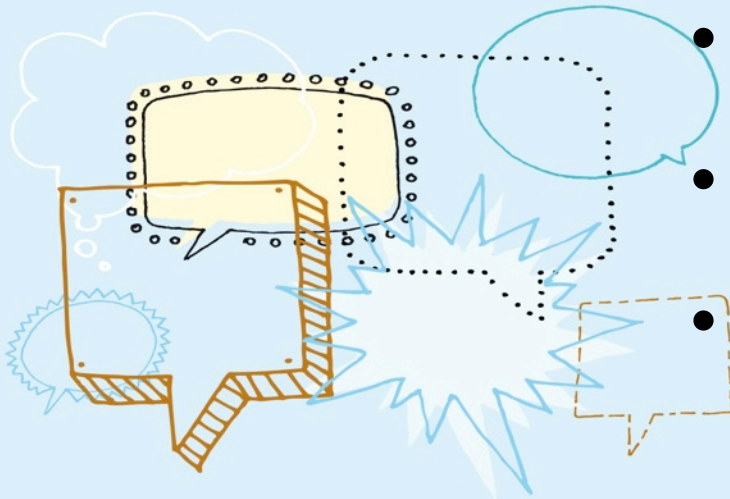


Word Generation ELEMENTARY

-24 two-week
interdisciplinary
units for
grades 4 & 5

Lots of SERP products: All PEER Based

- Math
- Classroom observation
- Literacy assessment
- School-level coherence building
- Science learning
- English language learners
- STARl for struggling readers



SERP is an existence proof



- Not a universally applicable model
- ProLEER is in some places inventing its own PEER models
- Instantiating a key SERP principle, the interdependence of
 - Children learning
 - Teachers learning
 - System learning