Discussions as a Context for Increasing the Literacy and Oral Language Learning of English Language Learners

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SERP

Agenda

- The nature of the problem: Reminding ourselves about struggling L2 learners
- The particular challenges of reading comprehension, particularly in content areas
- The crucial role of talk in classrooms serving ELLs
- One approach to building vocabulary and academic language through discussion
- Results: target word gain and writing outcomes
- Conclusion

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Second language learners in the United States

- Although over 400 languages are spoken in US public schools, the majority of ELLs in the US speak Spanish (76% of elementary ELLs; 71% of secondary students)

- The number of Hispanic students in the nation's public schools nearly doubled from 1990 to 2006, accounting for 60% of the total growth in public school enrollments over that period (Pew Hispanic Center)

- 2007 Dropout rate overall 8.75%. (NCES, 2009)
- 5.3% (White)
- 8.4% (Black)
- 21.4% (Hispanic)

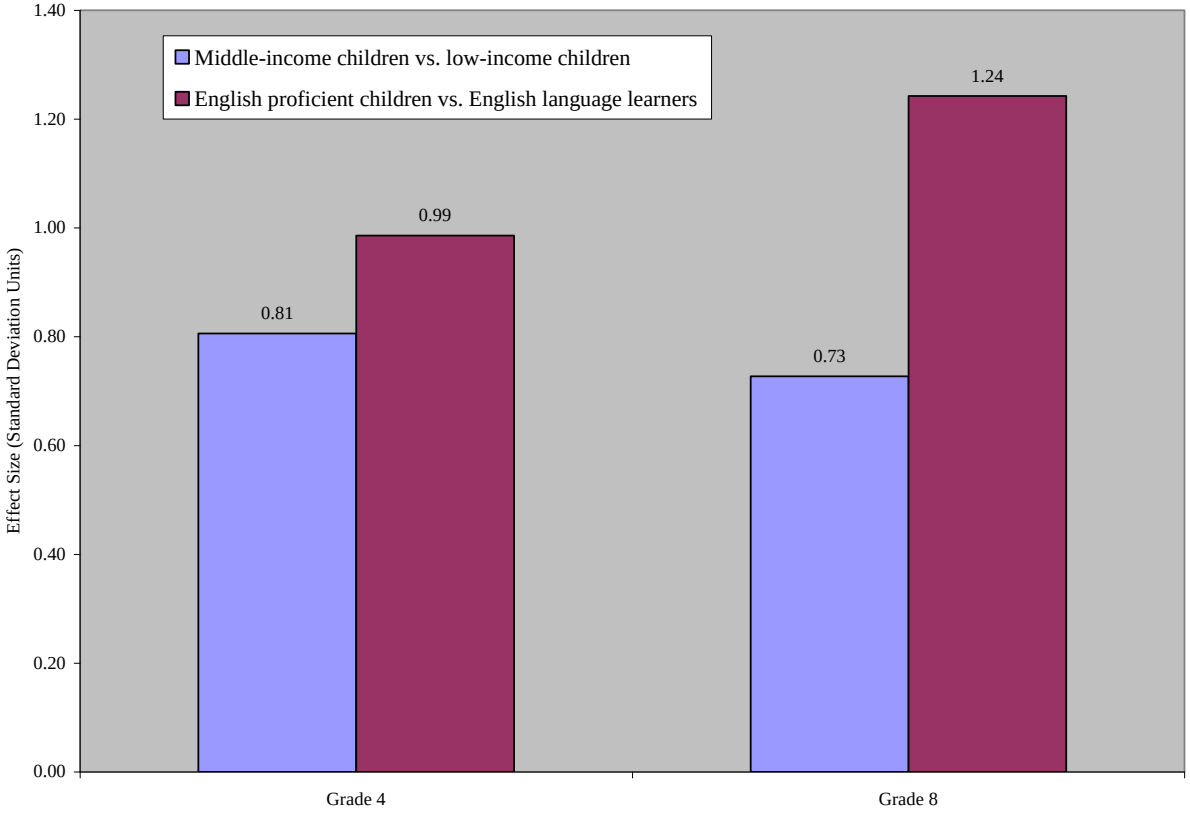
- Over 75% of ELLs are classified as low-income; with potentially limited L1 academic skills (although immigration is varied in terms of educational backgrounds and SES)

Adolescent English language learners

- 57% of adolescent ELLs were born in the US (important to note that many ELLs are recent arrivals)
- The achievement gap between ELLs and non-ELLs is most striking at the middle and high school level (Education Week, 2009)
- Recent court order in Texas (2008), deemed that English as a second language programs in middle schools and high schools were "dismal" ; the state was ordered to revamp its program (IDRA, Policy update, 2009)
- Massachusetts: Since TBE was voted out, the high school dropout rate nearly doubled for students still learning to speak and write in English (Gaston Institute, UMASS, 2009)

TABLES/FIGURES

Figure 1: Achievement Gap on the 2007 NAEP Grade 4 and Grade 8 Reading by Family Income and English Language Learner Status



2007 NAEP for ELLs

- 86% scored at basic or below
- 14% scored at proficient or advanced

What happens?

- A look at K-4 outcomes

Grade 3 –Almost all kids (99%) of every ethnic/racial group have basic word reading skills (ECLS-K)

Skill Tested	Fall Kindergarten				Spring First Grade				Spring Third Grade			
	White	Black	Hispanic	Asian	White	Black	Hispanic	Asian	White	Black	Hispanic	Asian
Reading												
Letter Recognition	.749	.600	.546	.790	.999	.994	.998	.999	1 (0)	1 (0)	1 (0)	1 (0)
	(.378)	(.424)	(.446)	(.349)	(.029)	(.060)	(.034)	.004)				
Beginning Sounds	.370	.206	.227	.415	.984	.949	.970	.988	.999	.999	.999	.999
	(.377)	(.307)	(.329)	(.397)	(.076)	(.146)	(.100)	(.062)	(.001)	(.003)	(.002)	(.001)
Ending Sounds	.216	.105	.121	.265	.956	.885	.922	.965	.999	.996	.998	.999
	(.302)	(.216)	(.233)	(.341)	(.120)	(.214)	(.165)	(.109)	(.006)	(.016)	(.009)	(.004)
Sight Words	.032	.013	.013	.077	.861	.696	.763	.891	.995	.975	.988	.997
	(.148)	(.095)	(.094)	(.245)	(.288)	(.397)	(.3630	(.261)	(.042)	(.099)	(.065)	(.028)

By Grade 3, there are racial/ethnic gaps in comprehension and literal inference items: White = 86%, Black = 64%, Hispanic = 76%, Asian=87%

Skill Tested	Fall Kindergarten				Spring First Grade				Spring Third Grade			
	White	Black	Hispanic	Asian	White	Black	Hispanic	Asian	White	Black	Hispanic	Asian
Words in Context	.012	.004	.004	.523	.322	.394	.624	.972	.890	.944	.987	
	(.093)	(.052)	(.176)	(.410)	(.380)	(.399)	(.406)	(.127)	(.248)	(.180)	(.079)	
Literal Inference	.004	.001	.002	.009	.19	.077	.112	.285	.861	.636	.762	.870
	(.047)	(.025)	(.041)	(.068)	(.315)	(.201)	(.246)	(.369)	(.266)	(.375)	(.330)	(.234)
Extropolation	0	0 (.004)	0 (.006)	0.001	0.032	0.011	0.017	0.049	0.353	0.144	0.234	0.329
	(.006)			(.007)	(.084)	(.040)	(.053)	(.106)	(.282)	(.178)	(.239)	(.272)
Evaluation	0	0 (.012)	.001	.002	.056	.017	.029	.106	.560	.267	.406	.501
	(.013)		(.020)	(.016)	(.154)	(.083)	(.108)	(.220)	(.365)	(.309)	(.367)	(.364)

Hypothesis/Fourth grade slump

- May in part be due to an increase in the cognitive and linguistic demands of grade level texts rather than a decrease in student skill
  - Early reading instruction focuses mostly on word reading
  - Greater demand for academic vocabulary knowledge in the later grades
  - ELL students with lower vocabulary and limited proficiency with the L2 have greater difficulty with comprehension

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Hypothesis: "adolescent literacy crisis"

- Something happens in the middle schools (engagement, motivation?)
- Greater language demands of secondary texts, particularly vocabulary that occurs across content area texts
- Unfamiliarity with specific academic vocabulary—the words necessary to learn and talk about academic subjects (*analyze, refer, claim, develop, interpret*)
- L2 learners navigate all of the above with the added burden of acquiring English and mastering grade-level content simultaneously

Poor comprehension outcomes in the middle school

- While poor comprehension outcomes in middle school are not necessarily a product of poor word reading, lack of vocabulary and academic language seem to be (e.g., Buly & Valencia, 2003; August & Shanahan, 2006)

- Lack of knowledge of the middle and lower frequency "academic "words encountered in middle and secondary school texts impedes comprehension of those texts (e.g., Stahl & Nagy, 2006; Stanovich, 1986; Carlo, 2005)

Why are you able to read the following text?

The Marlup

The marlup was poving his kump. Parmily a narg horped some whev in his kump. “Why did vump horp whev in mh frinkle kump?’ the marlup jufd the narg. “Er’m muvvily trungy,” the narg grupped.

“Er heshed vump norpled whev in your tranquil kump.” Do vump pove your kump frinkle?

Comprehension Questions

1. Who was poving his kump?
2. Who juffed the narg?
3. How trungy was the narg?
4. What kind of kump does the marlup have?
5. How would you feel if a narg horped in your marlup's kump? Why?

By using decoding and other skills, students can fluently “read” largely incomprehensible texts and answer “comprehension” questions

- Second language learners can seem proficient in comprehension if questions or activities simply require them to "pluck from the text" a satisfactory response.
- Background knowledge, vocabulary, and real comprehension must be checked by more meaningful interactions with texts
- Fast-paced, low-level question answer routines are the norm in most classrooms serving ELLs (Zhang, Anderson, & Nguyen-Jahiel, 2009)

Impediments to reading comprehension for L2 learners: Student factors and Classroom factors:

- Student factors
  - Lack of oral proficiency, especially L2 CALP
  - Lack of depth and breadth of word knowledge
- Classroom factors
  - Traditional classroom instructional practices don't promote these skills
  - ELL classrooms are characterized by individual seatwork, teacher directed whole-class instruction, IRE format, few opportunities for active oral engagment (Zhang, et al, 2009)
  - Most ELL students spend 70% of their time passively watching and listening (Simmons, et al, 1995)

BUT BEYOND ASSESSMENT

- We need classroom discussion that provides ELLs with opportunities for developing language skills that gives them greater access to texts, to ideas, to higher- level thinking, to participation in national conversations

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Academic Discourse

- Gamoran & Nystrand study, (1991) showed that the amount of time engaged in discussion was the strongest predictor of achievement scores in 16 middle and high schools

- Applebee, Langer, Nystrand & Gamoran,(2003) Replication study over a period of two years, looking at the impact of discussion-based approaches in 20 middle and high schools researchers found growth in abstraction and elaboration in writing (specifically about literature)

Evidence concerning the role of discussion

Classroom discussion is rare and brief
(Applebee, Langer, Nystrand & Gamoran, 2003)

	Low track classes	Middle track classes	High track classes	Mixed classes
Minutes of discussion/lesson	0.70	1.44	3.30	1.42

And it has always has been (Gamoran & Nystrand, 1991)

Discussion-based reading programs/pedagogical approaches

- Book Clubs, Literacture Circles, Instructional Conversations, and Collaborative Reasoning have been used successfully to develop ELLs reading comprehension and develop their higher order thinking skills
- These programs/approaches provide valuable opportunities for language development and improved reading comprehension

Language rich discussions/CR with ELLs (Zhang, Anderson, & Ngyuyen-Jahiel, 2009)

- Found that over a four-week period (8 discussions), ELL fifth-graders who participated in the peer-led, open format discussion approach, (CR) resulted in improvements on listening and reading comprehension measures as well as in the production of more coherent narratives with more diverse vocabulary and text evidence
- Doubled the ELL students' rate of talk

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What is Word Generation?

Why a word study program?

- The district and the Strategic Education Research Partnership have been engaged in a multi-year collaboration focused on improving reading comprehension at the middle school level
- Middle school teachers and administrators in the Boston Public Schools identified students' limited vocabulary knowledge as an obstacle to reading comprehension
- This led to the design and development of <u>a cross-subject vocabulary program with discussion as a primary focus for developing academic language for the middle school</u>

Challenges to Vocabulary Instruction

Our initial classroom observations in BPS revealed that:

- Vocabulary is not usually taught
- Instruction is fragmented between content areas
- Texts fail to engage adolescents

Word Generation: Program Goals

- Build the vocabulary of middle school students through repeated exposure to high frequency academic words in various contexts;
- Promote regular use of effective instructional strategies, especially the importance of **discussion** across all content areas teachers;
- Facilitate faculty collaboration on a school-wide effort.

Word Generation: Materials

- 24 weeks, each focused on a set of 5 target words selected from the Academic Word List (AWL) (15 minutes a day/5 days a week)
- Passages written at 6th grade level
- **Passages written to engage adolescents in high-level discussions on nationally-relevant topics as well as in topics that are of great interest to this age group**

  - Stem cell research and federal funding
  - Athletes and multi-million dollar salaries
  - Should amnesty be given to undocumented immigrants?
  - Affirmative action and college admissions
  - Should you be able to rent a pet?
  - Should there be curfews for teenagers?
  - Junk food: Should it be sold in schools?

Word Generation: Weekly Schedule

<u>Monday</u>
Paragraph introduces words

<u>Tuesday-Thursday</u>
Math-Science-Social Studies

<u>Friday</u>
Writing with focus words

Day 1 - Launch

- Introduction to weekly passage, containing academic vocabulary, built around a question **that can support discussion and debate**, (comprehension questions, student friendly definitions included)

Should the government pay for stem cell research?

In summer 2003, toddler Kai Harriott of Boston was sitting on her porch, singing with her sister. A gang member shot into the air to scare Kai's neighbors. Kai was hit by a bullet. After being shot, Kai was paralyzed. She could not move from the waist down. Because of her injury, Kai must use a wheelchair. Scientists have a theory that stem cells can someday help people like Kai.

Stem cells are found in different parts of the human body, including in our blood. Stem cells are also found in fertilized human eggs, called embryos. Stem cells from embryos can develop into cells that do many different jobs in the human body. With more research, we may be able to grow replacement parts for humans from stem cells.

If doctors can grow spinal cord cells, people like Kai might walk again. New brain cells could help people who have had strokes or Alzheimer's. Scientists might also learn to grow the cells that make insulin. This could help people with diabetes. But to obtain stem cells, scientists must destroy a human embryo.

Many people think that human life begins when an egg is fertilized. They think destroying a human embryo is murder. They say scientists should only work with stem cells from adults. But stem cells from adults won't grow into many different kinds of human cells. Stem cells from embryos may be our only hope of curing diseases. Investigating stem cells will take years and cost millions. Should the government pay for stem cell research?

Day 2- Science

Thinking experiments to promote discussion and scientific reasoning

Disclaimer: These are fictitious data
Target Words: subsequently, dominant, import
Background Information: Countries have different views about citizens carrying guns. In some countries the import and export of guns is illegal. Subsequently, no citizen can own a gun in those countries (text continues).
Questions: Are people more aggressive in countries that allow handguns?

Hypothesis: Citizens of countries that allow handguns are more aggressive than citizens of countries that do not.

Materials:
Procedure:
Data:
Conclusion:
What evidence do you have that supports your conclusion?

Day 3- Math

- MCAS-type mathematics problems using some of the target words:

1. Some people believe that embryonic stem cell research is important. They think this because scientists use these cells to investigate diseases. Scientists try to find cures for these diseases, and for conditions like paralysis. Other people believe that embryonic stem cell research is wrong. They think this because scientists must destroy embryos to obtain these cells. In a recent poll, 40.75% of people said that the government should not pay for embryonic stem cell research. Which decimal is equivalent to 40.75%?

A) 4.075
B) .4075 *
C) .04075
D) .02

a) Students can work in pairs
b) Whole class discussion
c) Open-response (show/explain how you got your answer)

Day 4- Social Studies

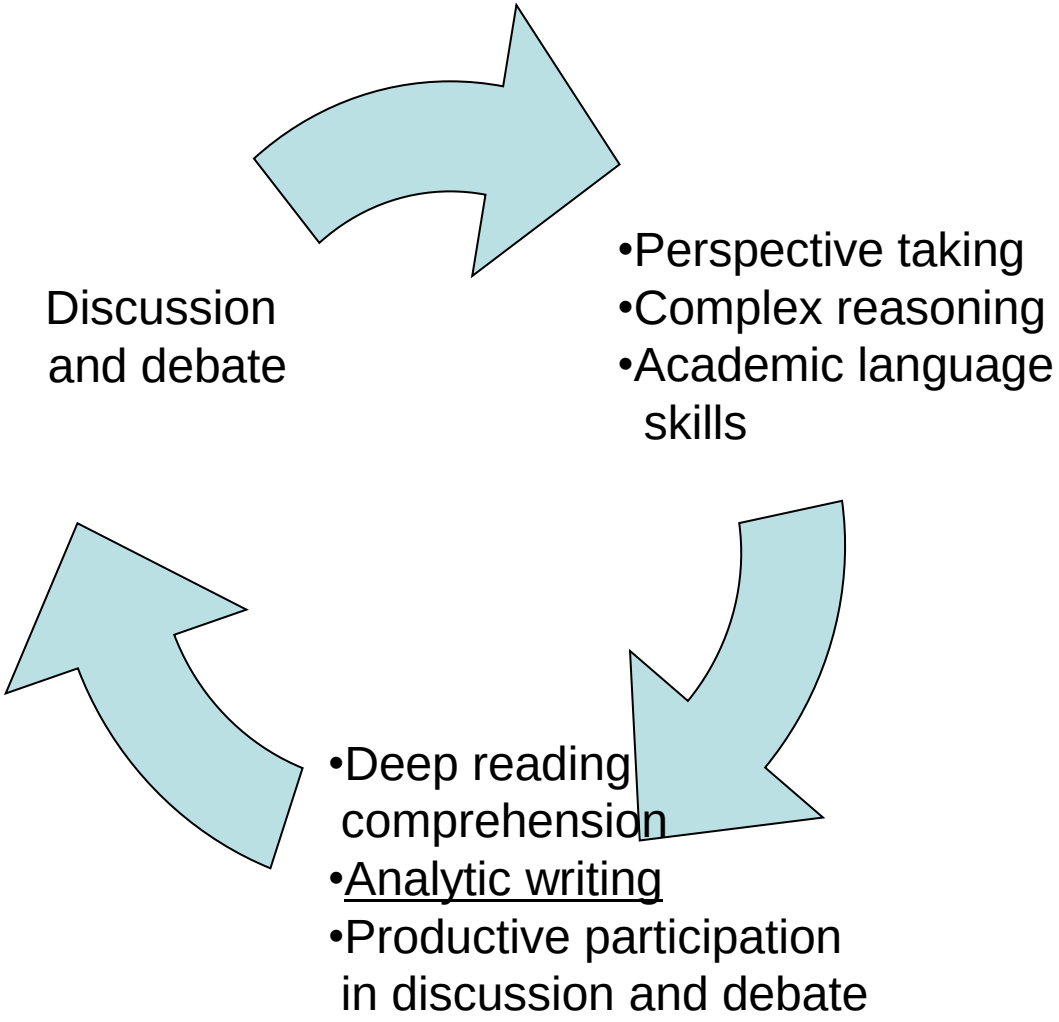
- Developing *positions on the issue* set out in the passage, to help the class frame the debate.

Positions:

1. Scientists should not be allowed to investigate cures for disease using stem cells from embryos. This is trying to "play God".
2. Destroying an embryo to get the stem cells is murder.
3. The government should pay for embryonic stem cell research. This could lead to cures for many injuries and diseases.
4. Scientists should be allowed to do research on embryonic stem cells, but the government should not pay for it because many taxpayers oppose it.

Note: these are **optional**. The class may want to develop its own positions!

Theory of Action



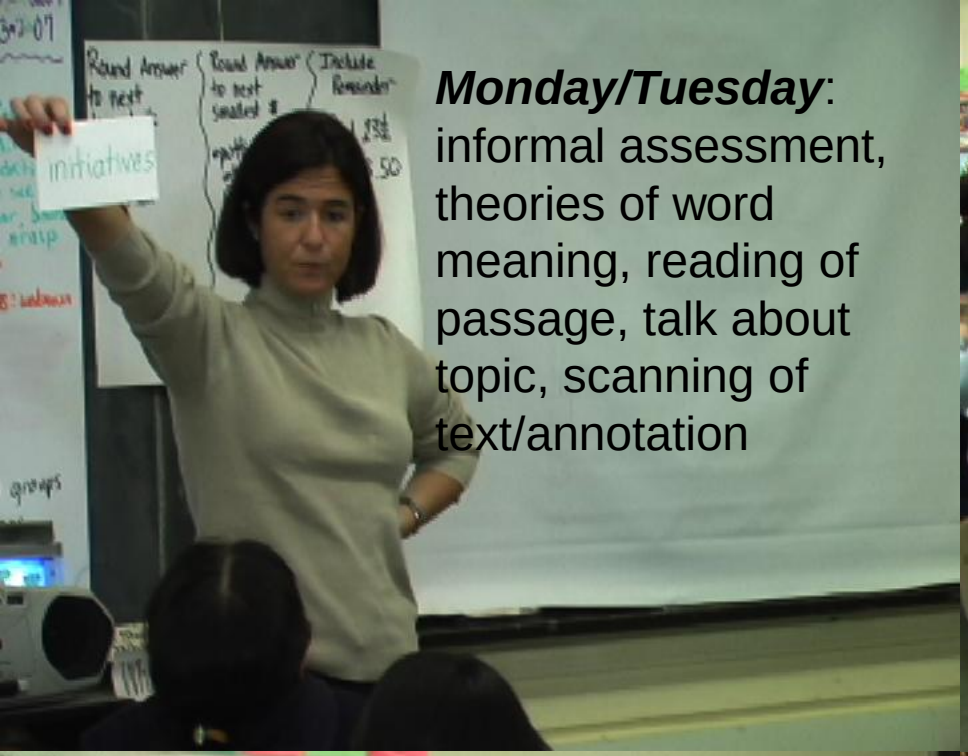
Day 5- ELA

- Writing Activity:

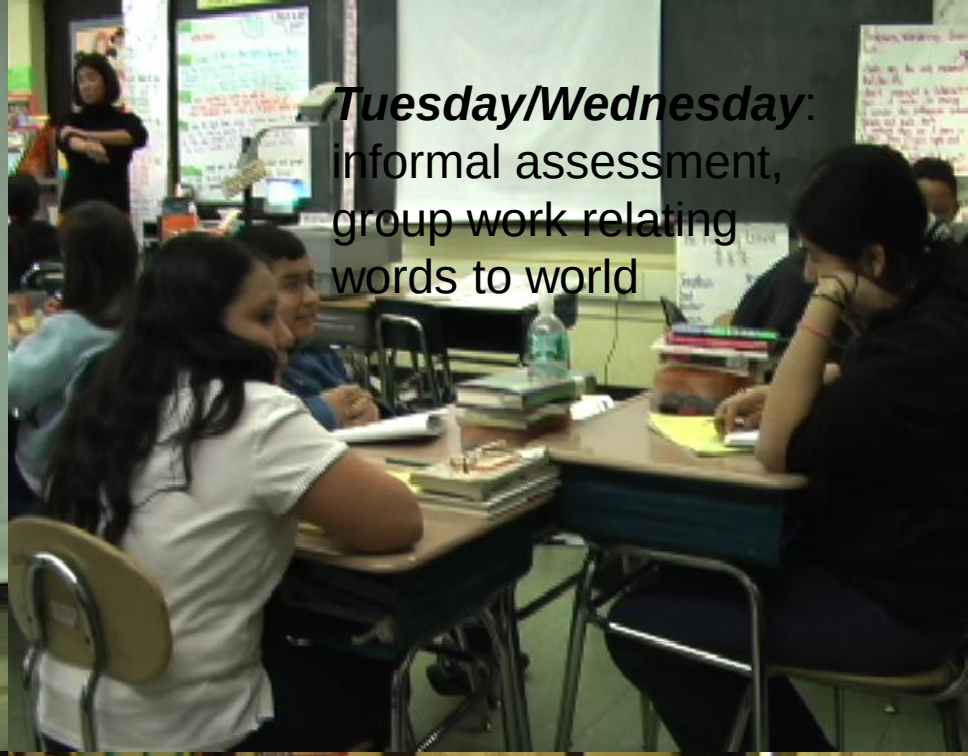
Should the government pay for stem cell research? Give evidence to support your position.

Discussion/Debate and Writing Outcomes (WG)

The more English language learners hear academic language and use them in debates and classroom discussion, the more these all-purpose, fly-under-the-radar, high leverage words, appear in their writing..

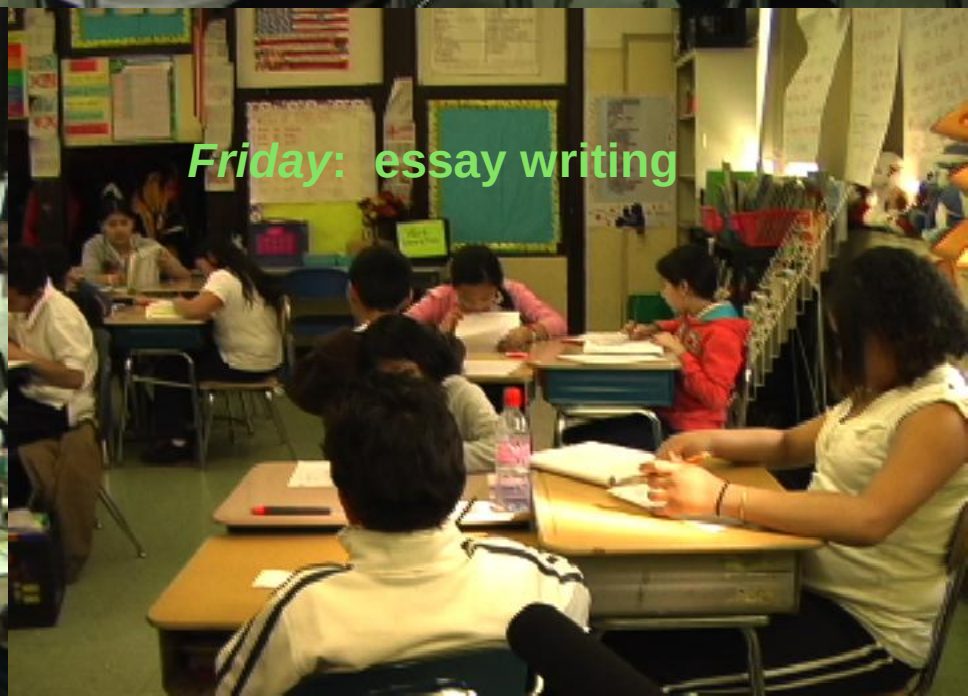


Monday/Tuesday: informal assessment, theories of word meaning, reading of passage, talk about topic, scanning of text/annotation



Tuesday/Wednesday: informal assessment, group work relating words to world

Wednesday/Thursday: debate

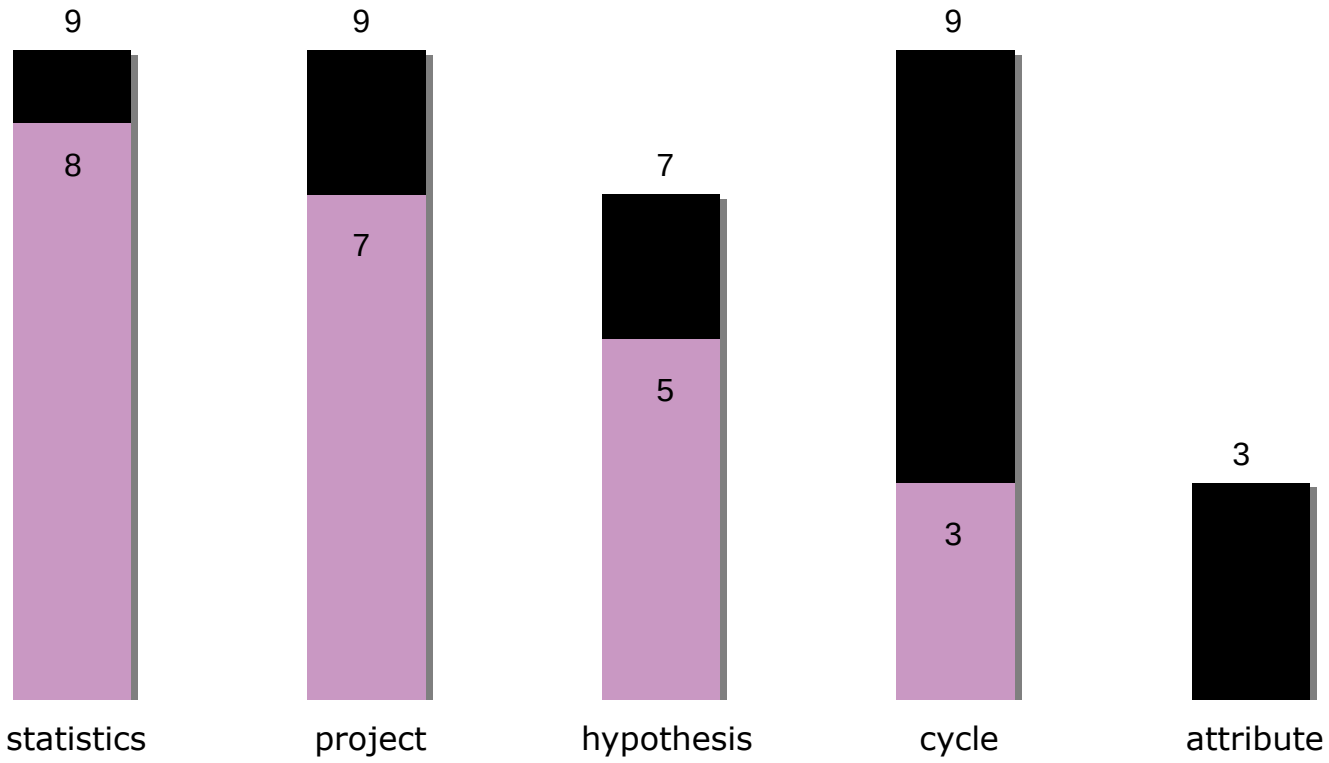


Friday: **essay writing**

Word Generation at the McKay Middle School

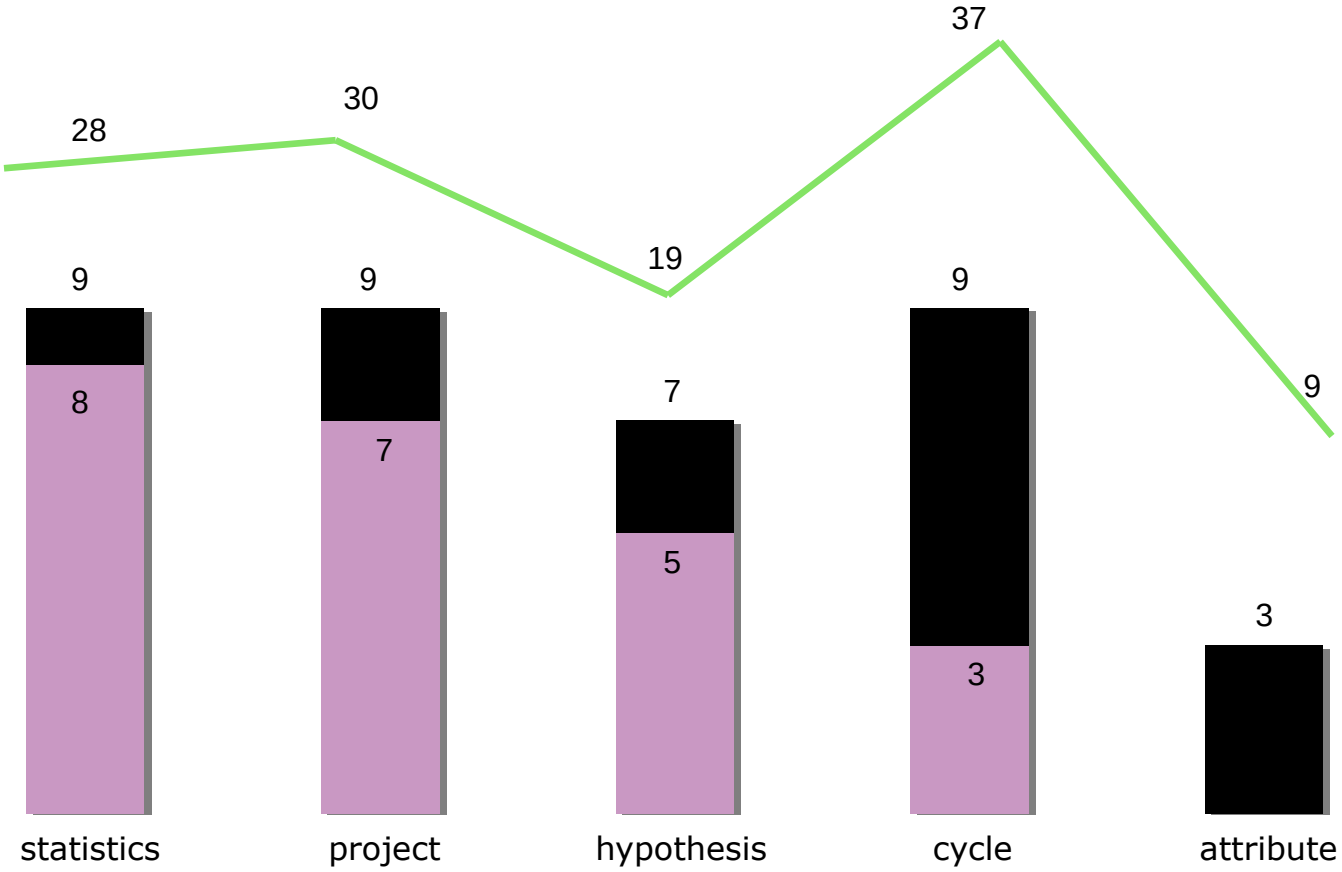
- 5th grade
- 24-25 students
- Class is 100% English Language Learners
- One teacher (Ms. Rosen) is teaching all five days = 100 minutes/week of instructional time
- Transcribed classroom talk and coded writing essays for target word use (attempted, appropriate, inappropriate)

Global warming:
WEEK 8 WORDS appropriate use in student writing
as a proportion of **attempted** use



24-25
students

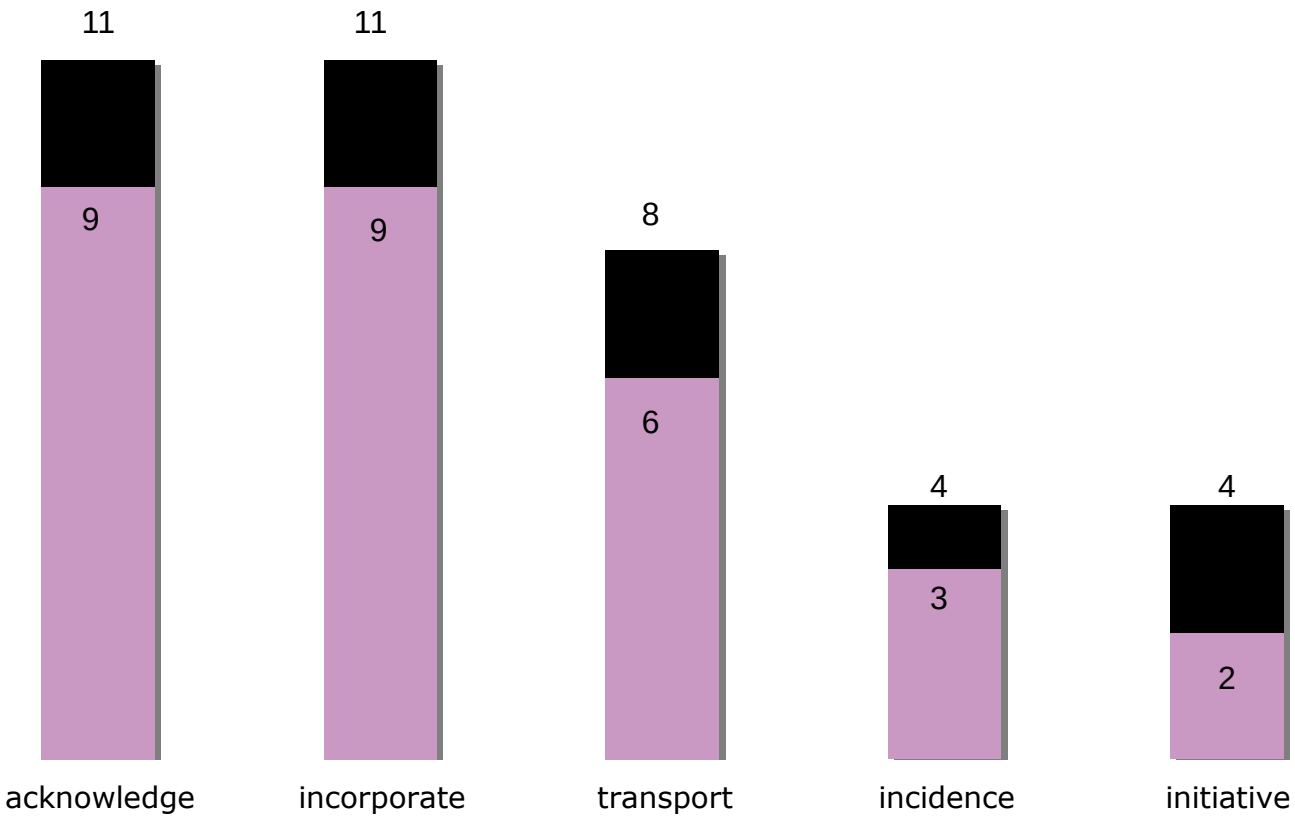
appropriate use as a proportion of **attempted** use next to number of times expressed during week **8**



Number of Mentions of the Week 8 Words by Day and Total

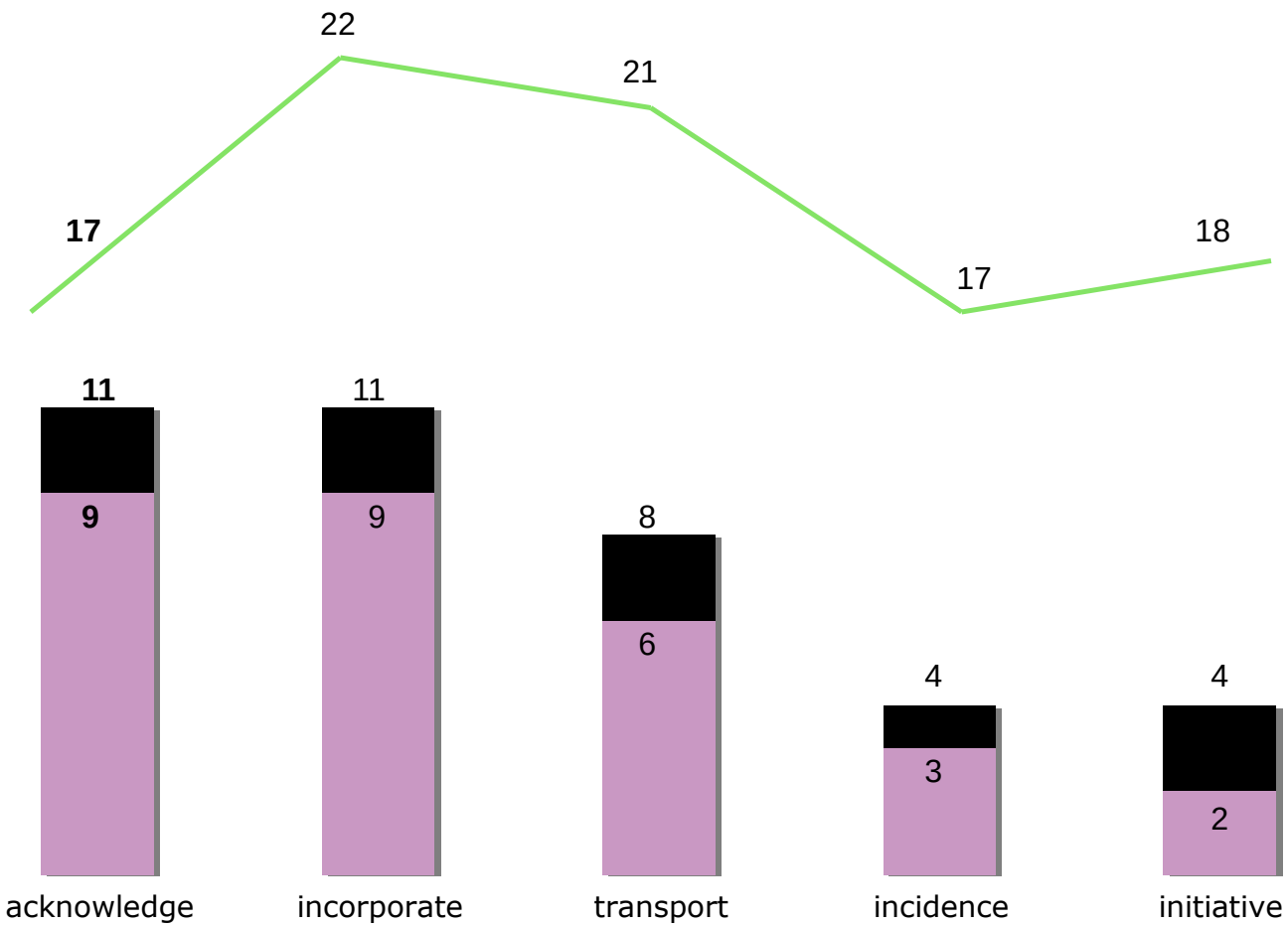
	statistics	project	hypothesis	cycle	attribute
Day 1	10	12 (3)	10 (1)	13 (2)	4
Day 2	7 (2)	10 (1)	4 (2)	17 (2)	2 (1)
Day 3	3	2	1	1	0
Day 4	4	3	1	2	1
Day 5	4 (1)	3 (1)	3 (1)	4 (1)	2 (1)
Total	**28**	**30**	**19**	**37**	**9**

Junk Food: WEEK 11 WORDS appropriate use in student writing as a proportion of **attempted** use



24-25
Students

appropriate use as a proportion of **attempted** use next to number of times expressed during week **11**



Number of Mentions of the Week 11 Words by Day and Total

	acknowledge	incorporate	transport	incidence	initiative
Day 1	7	4 (1)	7 (2)	6 (1)	3
Day 2	5 (1)	4 (1)	5 (2)	7 (1)	10 (1)
Day 3	-	-	-	-	-
Day 4	3	11 (5)	5 (2)	4	5 (1)
Day 5 (40 min.)	2	3	4	0	0
Total	**17**	**22**	**21**	**17**	**18**

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Year 1 Pilot Schools

Westfield
Middle School

- 80 % Black
- 16% Hispanic
- 1.8 White
- 1.6 Asian
- 29% Special Education
- MCAS

Reilley
Middle School

- 62% Black
- 18.1 % Hispanic
- 9.3% White
- 8.9 % Asian
- 25% Special Education
- MCAS

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Multiple Choice Test Results

	Grade	n	Mean percent Correct 1st 12 week words Pre	Post
W	Six	29	65.09	77.82
	Seven	46	68.20	82.75
	Eight	64	74.67	85.02
R	Six	104	68.28	77.02
	Seven	109	72.24	79.04
	Eight	120	75.03	83.96

Multiple Choice Test Results

	Grade	n	Mean percent Correct 1st 12 week words Pre	Post
W	Six	29	65.09	**77.82**
	Seven	46	68.20	82.75
	Eight	64	**74.67**	85.02
R	Six	104	68.28	**77.02**
	Seven	109	72.24	79.04
	Eight	120	**75.03**	83.96

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Year 2 results

	Pretest Mean	Pretest SD	Post test Mean	Post test SD	Gain
• **Comparison** (n= 294) (3)	21.02	6.20	22.97	7.15	1.95
• **Treatment** (n=632) (5)	18.53	6.17	22.93	7.33	4.4

40 items…represents 4.5 word gain.. Taught 120.. Infer they gained approximately 14 target words through participation in all the weekly activities; students who gained more words also did better on the MCAS

Descriptive statistics also suggest that students who spoke a language other than English at home improved more than monolingual English students on measures of target word knowledge (Snow, Lawrence, & White, in press)

	Students who spoke a language other than English at home				Students show spoke English at home			
	Comparison School (n = 151)		WG School (n = 287)		Comparison School (n = 168)		WG School (n = 410)	
	Pretest	Posttest	Pretest	Posttest	Pretest	Posttest	Pretest	Posttest
Mean	21.10	22.38	18.56	22.26	21.32	23.03	18.70	22.32
SD	6.40	6.84	6.46	7.06	6.81	7.36	6.49	7.12
Gains	1.28		3.70		1.71		3.62	

Do students use (and re-use) the target WG Words in their Writing?

- On average, 2 of the 5 target words were used in the weekly essays

- On average, 10 past target words were used across the intervention

Top 4 Learned Words

- impact (used 50 times after it was introduced)
- analyze (used 40 times after it was introduced)
- conflicted (used 33 times after it was introduced)
- benefit (used 21 times after it was introduced)

Writing Quality Results

- Interestingly… most of the growth occurred during the last 10 weeks of the intervention:
  - First 10 weeks = .03 (or .58 points)
  - Second 10 weeks = .04* (or .81 points)
  - Practice effect only (no instructional guidance)

Yadarys: Resource Room: 6th grader
"Who is responsible for protecting teens from on-line predators?"

- My perspective about the controversy of the debate is that the *govermint* is the person responsible for protecting teens from online predators. Because the *govermint* shoud have a *meding* with people how will like to make a *wedsite* and the *govermint* shoud make the person how would like to make a *wed* site *sine* a *contraket* with thing that are *iniporeit* to have on the *wed* site and rules *to*. I can also justify my perspective by saying that it is the *govermint folt* if there is a kid in *eney* part of the world lays there see one a *wed site* that is *iniporeit* or *dangice*. The kids can creat *koce* and tension between them and *there parision*. The kids will tell and *pace* on to more kids to see the *wed* site and they will become bad kids and they will not be *focest* on school and the things they do in school like research data and facts or cite *there* perspectives about things they will *mesup* there *fucher*. There life will never be ongoing so that is my biases about who is responsible for protecting teens from oline predators.

corrected and analyzed for target word use; no Week 15 target words used

My perspective about the controversy of the debate is that the government is the person responsible for protecting teens from online predators. Because the government should have a meeting with people how (who) will like to make a web site and the government should make the person how (who) would like to make a web site sign a contract with thing(s) that are important to have on the web site and rules too. I can also justify my perspective by saying that it is the government('s) fault if there is a kid in any part of the world lays there see one a web site that is inappropriate or dangerous. The kids can create chaos and tension between them and their parents. The kids will tell and pass on to more kids to see the web site and they will become bad kids and they will not be focused on school and the things they do in school like research, data and facts or cite their perspectives about things they will mess up there future. Their life will never be ongoing so that is my bias about who is responsible for protecting teens from on-line predators.

Word Count: 194

Target Words Used from Previous Weeks

biases, cite, contract, controversy, data, debate, focus, inappropriate, justify, on-going, perspective, research, cite, tension

Week 1: controversy, perspective, biases, debate

Week 2: research, cite, data

Week 3: on-going

Week 4: tension

Week 6: inappropriate

Week 13: focus

Week 15: 0 (pose, contact, prime, minimum, unmonitored)

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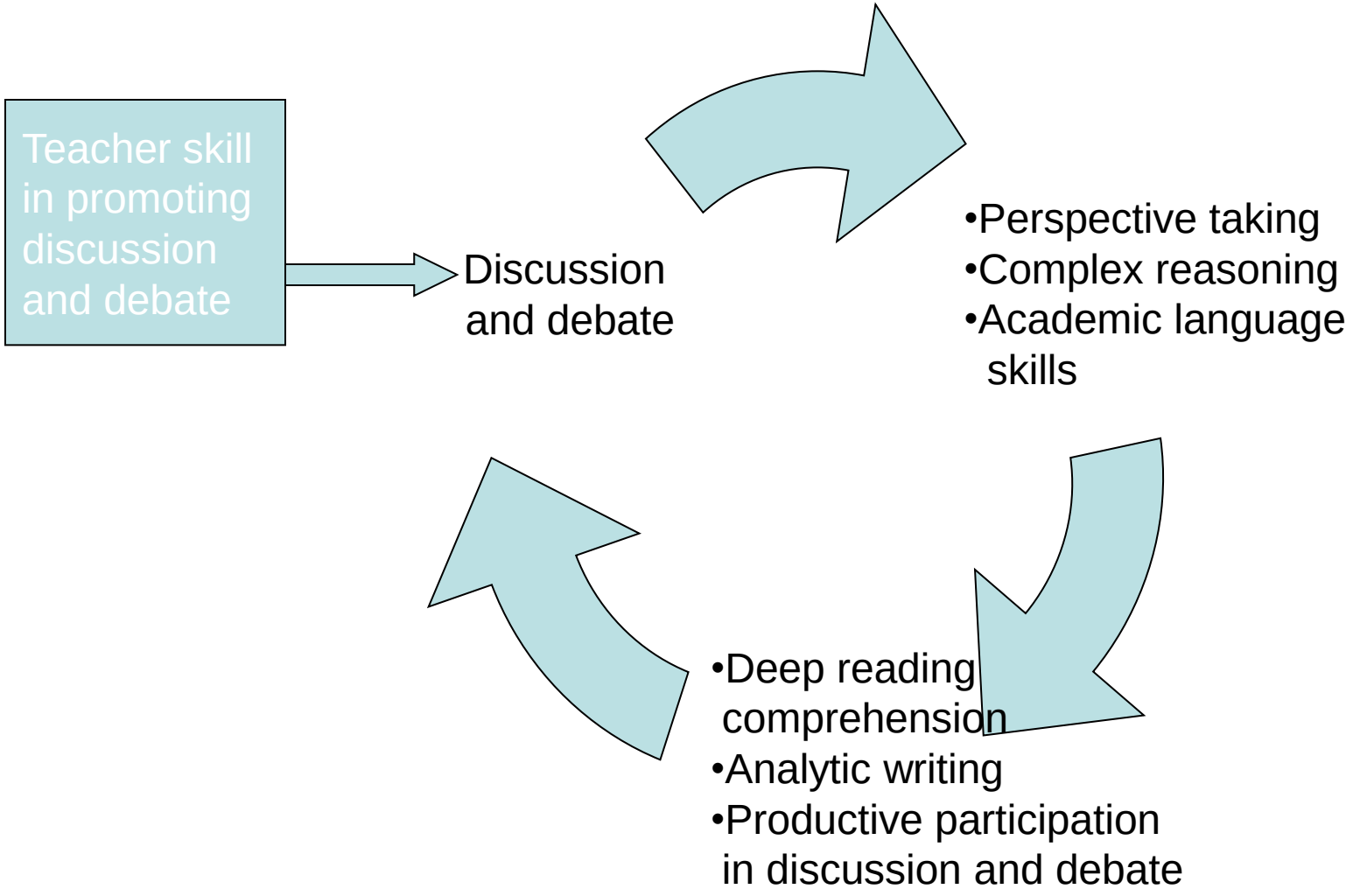
Serendipitous discoveries from WG classroom discussion and debates…

- Teachers are impressed by the sophistication of students' ideas
- Students value the opportunities for discussion, especially of more student-centered topics (although students were passionately engaged in debates around genetically modified foods and doctor-assisted suicide and federal funding for stem cell research)
- Struggling readers had a new venue from which to present themselves newly as academic, political, and social actors

Challenges discovered

- Launching/managing discussion is not part of teacher repertoires
- This is not a skill prioritized on state standards or through certification procedures
- Learning to do it is not easy (though it is possible)

Theory of Action



To conclude..

- Engaging in WG discussion-based weekly activities across content areas can improve word learning for L2 learners on target word measures and their use in persuasive essays
- Embedding debate and discussion-based classroom activities as well as systematic vocabulary instruction school-wide has the greatest potential to accelerate the reading achievement of low-income children and especially English language learners
- Further research is needed to gauge the impact these discussion based activities promoted by WG have on ELLs' language development
- Modifying WG for ELLs and 4th and 5th grades (funding from IES)

Thank you.. (white.claire@gmail.com)

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- James Kim, Harvard Graduate School of Education
- Sarah Meacham, post-doc, Strategic Education Research Partnership
- Josh Lawrence, post-doc, Harvard Graduate School of Education
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