CREATE
Center for Research on the Educational Achievement and Teaching of English Language Learners

What we Know from Research about Teaching English Language Learners in the Middle Grades

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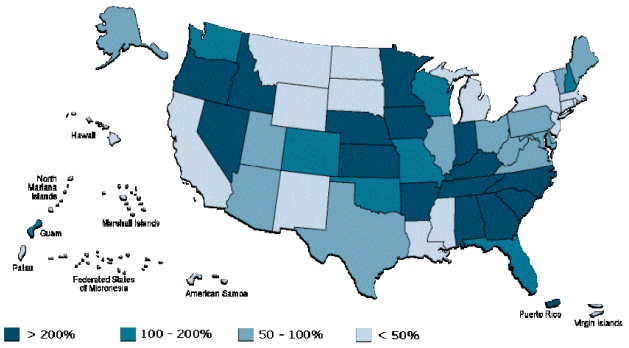
Overview

- What we know about the population
- Challenges and Opportunities
- The way forward

What we know about the population

- Fast growing
  - 184% from 1979 to 2006
  - Expected to be 30% of school-aged population in 2015
  - 19 states have reported 10-year growth in excess of 200%

ELL Growth



States with over 200% growth:

Alabama	Indiana	Minnesota	Oregon
Arkansas	Iowa	Nebraska	South Carolina
Georgia	Kansas	Nevada	Tennessee
Idaho	Kentucky	North Carolina	Puerto Rico

No Child LEFT BEHIND

Source: U.S. Department of Education's Survey of the States, Limited English Proficient Students and Available Educational Programs and Services, 1991-1992 through 2000-2001. Slide courtesy of Kathleen Leos, USDOE.

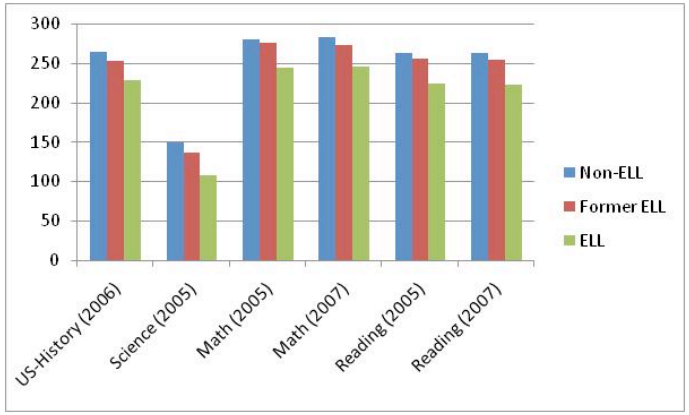
What we know (cont.) - Diverse

- Native Language Literacy
  - Some may be well below grade level
  - Some may have strong language and literacy skills
  - Oral language skills may be strong, while academic language proficiency may be weak
- Prior academic preparation
  - Immigrant students may have no formal prior schooling
  - Others may have strong academic preparation
  - Native born may have varied schooling histories
    - mobility and inconsistencies in language of instruction models
- Variability in Socio-demographic indicators
- Variability in L1

What we know (cont.) – Risk

- Still developing proficiency in academic English
- Weak or non-existent prior schooling
- Poor L1 literacy
- Weak L1 academic language proficiency
- Socioeconomically Disadvantaged
- Often attend schools in the US that face organizational challenges – teacher turnover
- Learning English while learning content through English (Short & Fitzsimmons, 2006 – *Double the Work*)

NAEP Performance – Grade 8



Note: Science scale is 0-300; all others 0-500

NAEP Performance – Grade 8

Group	Score - Year	Below Basic	Basic
No	Math - 2007	27	40
Formerly ELL	Math - 2007	37	44
Yes	Math - 2007	70	24
No	Reading - 2007	25	44
Formerly ELL	Reading - 2007	33	52
Yes	Reading - 2007	71	25
No	Science - 2005	40	31
Formerly ELL	Science - 2005	58	28
Yes	Science - 2005	86	11
No	US Geography - 2006	33	51
Formerly ELL	US Geography - 2006	49	46
Yes	US Geography - 2006	81	18

All NAEP results obtained using NAEP data tool on NAEP website

David J. Francis
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Challenges and Opportunities

- Complexity of Schools as Organizations
  - Limited communication across teachers
    - Varies by school
    - interventions / instructional changes need to be molded to fit all types of organizations
      - Word Generation: materials designed for use by each content area teacher, but elements are present that can exploit teaching teams where they exist

Challenges and Opportunities

- Complexity of Schools as Organizations
  - Curriculum alignment across grades
    - What Bill Schmidt showed us about Math has clear implications for math learning for all students and especially for EL students
    - Coherence, Focus, and Rigor
      - Recall what Okhee Lee told us: "It is the quality of the instruction, not the quantity, that matters."
      - Focus and rigor can be increased with supplemental materials; Coherence cannot.
    - The analysis done by Dr. Schmidt for Math is needed for Science, Social Studies, and Language Arts

Challenges and Opportunities

- Complexity of Schools as Organizations
  - Teacher Mobility and Staffing Challenges
    - How much can the impacts of these challenges be mitigated by increased coherence?
  - Teacher Professional Development
    - Challenges of time and need
    - Integration of PD with materials, hands on practice, in class opportunities
    - Essential component to effective implementation
    - Implementation is key to effectiveness

Treatment vs Treatment Delivery

- 2M Americans a year become infected while patients in hospitals
- Roughly 90K will die from their infection
- The number one reason that patients become infected in hospitals…
  - Drs. and nurses fail to adequately wash their hands as often as they should
  - Controlling infections is as simple as getting doctors and nurses to wash their hands correctly with antibacterial soap

from Gawande, A. (2007). *Better: A Surgeon's Notes on Performance.*

Treatment vs Treatment Delivery

- Hand washing is highly efficacious in stopping the spread of germs
- But hand washing is ineffective, because doctors and nurses cannot comply with the treatment 100% of the time
  - 70% compliance is not good enough
- Teaching Reading, Math, Science, and Social Studies is more difficult than washing one's hands

Treatment vs Treatment Delivery

"The fundamental problem with the quality of American medicine is that we've failed to view the delivery of health care as a science. The tasks of medical science fall into three buckets. One is understanding disease biology. One is finding effective therapies. And one is ensuring those therapies are delivered effectively." (Peter Pronovost developer of the checklist to reduce MRSA, as quoted by Atul Gawande, in Annals of Medicine: The Checklist, *The New Yorker*, Dec. 10, 2007)

Challenges and Opportunities

- These organizational factors affect our ability to deliver the best instruction throughout the school, year in and year out
- They interact with factors such as lack of coherence in the curriculum
- They differentially impact EL students in the middle grades where students interact with more teachers
- There is no excuse for curriculum standards to vary across schools or districts as a function of race, language status, or social class

Challenges and Opportunities

- Complexity of Classrooms as Learning Environments
  - Demands on instructional time
  - Often present limited opportunities for student language use
  - Often present limited opportunities for high-level language inputs
  - Often do not use explicit instruction to promote language development

Challenges and Opportunities

- All of the instructional presentations suggested opportunities for addressing these challenges
  - They exploited development of materials that focused on language within and across content areas
  - They used groups and collaborative learning to increase opportunities for students to use language in the classroom
  - They used writing to integrate and consolidate
  - They exploited the use of cognates where feasible
  - They showed ways to use explicit instruction while also allowing student directed and student motivated activities

Challenges and Opportunities

- Overcoming Teachers' Roll Expectations and Biases Regarding Instructional Approaches
  - Content area teachers as teachers of language
    - Snow, August, Short, Lee, Vaughn presentations all showed that this hurdle can be scaled
    - Requires integrated professional development and appropriate instructional materials

Challenges and Opportunities

- Overcoming Teachers' Role Expectations and Biases Regarding Instructional Approaches
  - Pre-teaching is not antithetical to discovery learning and inductive reasoning
    - Language as a framework for shaping and organizing observations and communicating
    - L1 and L2 can be used to good advantage
  - Explicit teaching can facilitate learning and transfer (Chen & Klahr, 1999; Toth, Klahr, & Chen, 2000)

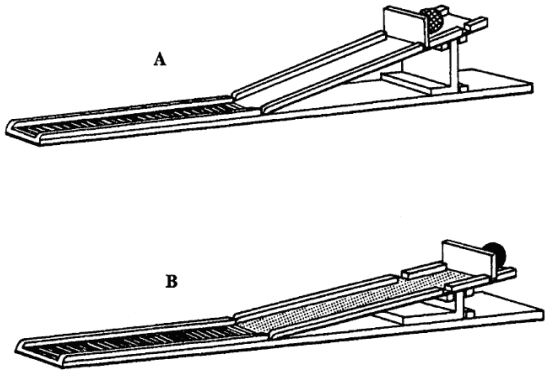
Chen & Klahr (1999)

- Lab study of children's ability to learn a control of variables strategy (i.e., how to design experiments)
  - Explicit Training
    - Received an explanation of rationale, examples, and probe questions before and after experiments
  - Implicit Training
    - Received probe questions before and after exper.
  - Unprompted Exploration
    - Engaged in experiments. No training or probes, but given more opportunity to experiment

Chen & Klahr (1999)

- Used three kinds of experimental task
  - Springs, Sinking Objects, and Ramps
- Each domain included 4 variables with 2 values each
  - e.g. Ramps task: length of the ramp, steepness, surface type, and type of ball
- Children worked with one task on day one and the other two on the second day (one week later)

Chen & Klahr (1999)



From Toth, Klahr, & Chen (2000), *Cognition and Instruction*, 18, 423-459.

Chen & Klahr (1999)

- Four phases: Exploration, Assessment, Transfer – 1, Transfer – 2.
- Lab Based study found
  - Only children in the explicit training condition increased their knowledge across the four phases of the experiment
  - Transfer and retention varied by grade
  - Grade 4 students showed transfer and long term retention (7 month paper and pencil posttest)

Toth, Klahr, & Chen (2000)

- Adapted Chen & Klahr (1999) to G4 classrooms
- Replicated the controlled laboratory experiment
  - Students receiving explicit instruction
    - Learned more initially,
    - Transferred knowledge to related tasks,
    - Transferred knowledge to abstract assessments
    - Retained what they learned better
  - Students did show gains following experimentation only, but not as great as with instruction, and not as consistently
- Dr. Lee's inquiry matrix and levels of inquiry

Challenges and Opportunities

- Instructional materials may be suboptimal
  - Opportunities to learn word meanings are hindered by limited replication
    - Limited replication within a text
    - Limited replication across texts
    - Narrative and expository texts differ in the kinds of words used and the frequency with which words are repeated
    - Focus on narrative texts may be counter productive for learning academic vocabulary
  - Revoicing and other forms of redundancy (Walqui)
  - "Hands on" requires "minds on" to be effective

Challenges and Opportunities

- Technology has a role to play and can serve as a bridge for EL students
  - Redundancy and systematic replication
- Echo Dr. Vahey's conclusion that it is not simply technology, but integration of technology with materials and teacher professional development
- Simulation is not just for Math
  - Work in science reasoning has shown that virtual experimentation can also be effective ("virtual hands on")

Challenges and Opportunities

- Statistical vs practical significance
  - Both are important
  - We have found in our CREATE studies that the interventions are improving on standard practice
  - We are rightly concerned that the impacts are not as large as we would like
  - They are meaningful, and compounded over years and content areas may lead to more substantial gains
  - But there is room for improvement and it is worth considering if we can get there by increasing coherence, focus, and rigor

The Way Forward

- Increase engagement of content area experts in designing our interventions
- Integration of practices that are working
- Building coherence, focus, and rigor
- Engineer improved implementation

The Way Forward

- Continue building partnerships with
  - States and Districts
  - Schools and Teachers
  - Parents and students
  - Other researchers
- Continue relying on rigorous experimental validation of treatments
- Engineer sustainability

Conference Planning

- Elfrieda (Freddy) Hiebert (UC Berkeley)
- Alice Folkins (UC Berkeley)
- Ann Brown (TIMES / UH)
- Cate Coburn (CAL)

Contact CREATE

- Find out more about CREATE's projects and activities at www.cal.org/create.
- Subscribe to the email announcement list to receive regular updates from CREATE: www.cal.org/create/join.

References

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