

Effects of Native Language and Context Factors on the Learning Trajectory of English Language Learners: A Growth Model Approach

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Research Questions

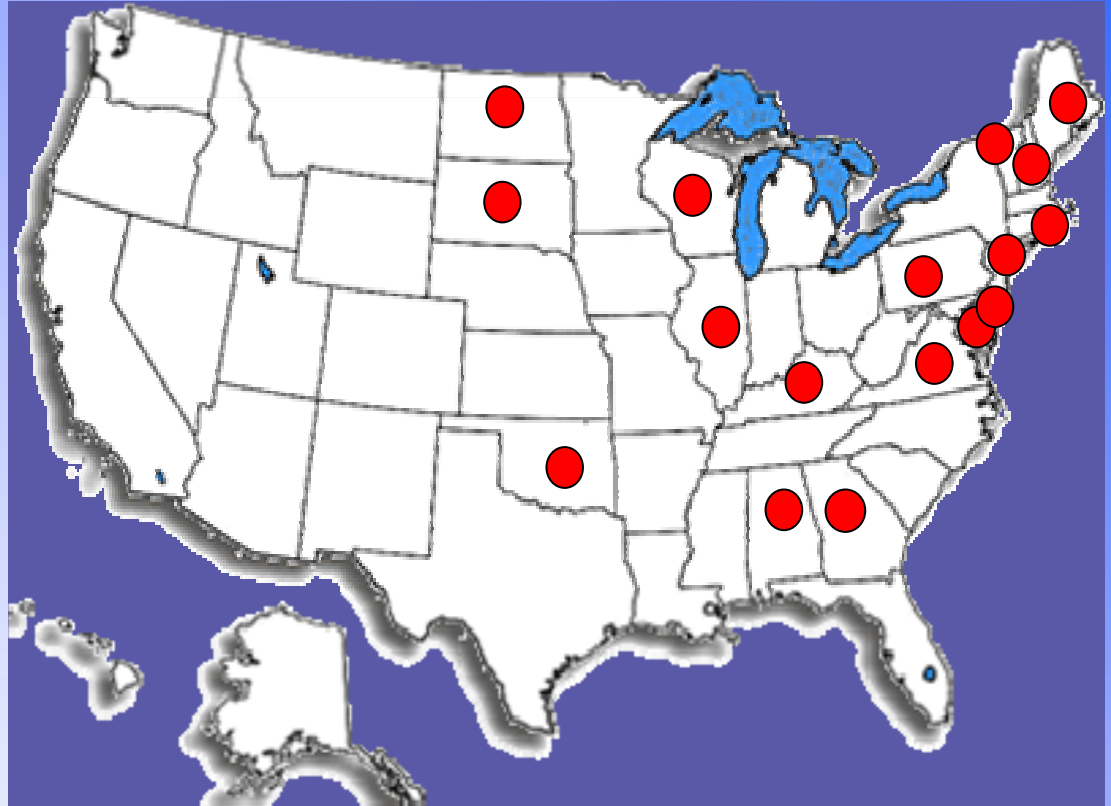
- What is the shape of the learning trajectory (growth) of English Language Learners on the ACCESS assessment?
- What contextual, background and linguistic factors effect or account for this shape?



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Alabama
Delaware
District of Columbia
Georgia
Illinois
Kentucky
Maine
New Hampshire
New Jersey
North Dakota
South Dakota
Oklahoma
Pennsylvania
Rhode Island
Vermont
Virginia
Wisconsin

The WIDA Consortium



WIDA states represent more than 500,000 English Language Learners.



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Factors that Influence English Language Proficiency

- Age
- Gender
- Family background (home effects)
- Native language
- Exposure to the Second Language
- Language of Instruction
- Exposure to education in L1
- School context, school characteristics



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Hypotheses

1. Shape of ELL's learning trajectory is non-linear and varies across grade clusters.
2. Native language influences the starting point and growth rate of ELL's
3. Contextual (i.e. school level) and student background factors matter for ELL's learning trajectory.



Data

- ACCESS for ELLs® data collected from three WIDA Consortium states over 3 years (approximately 18,000 students).
- Student demographic information
- Common Core of Data (CCD) information



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Variables

- ***Dependent variable:*** ACCESS Composite Score
- ***Independent variables:***
 - Background factors: age, gender, IEP status
 - Contextual factors: length in program, %FRL, % ELL, student-teacher ratio, state
 - Linguistic factors: Spanish or non-spanish



Statistical Methods

- Growth model for the study of individual change
- Repeated-observations nested within persons
- Two-level model:

Repeated-Observations Model (level-1)

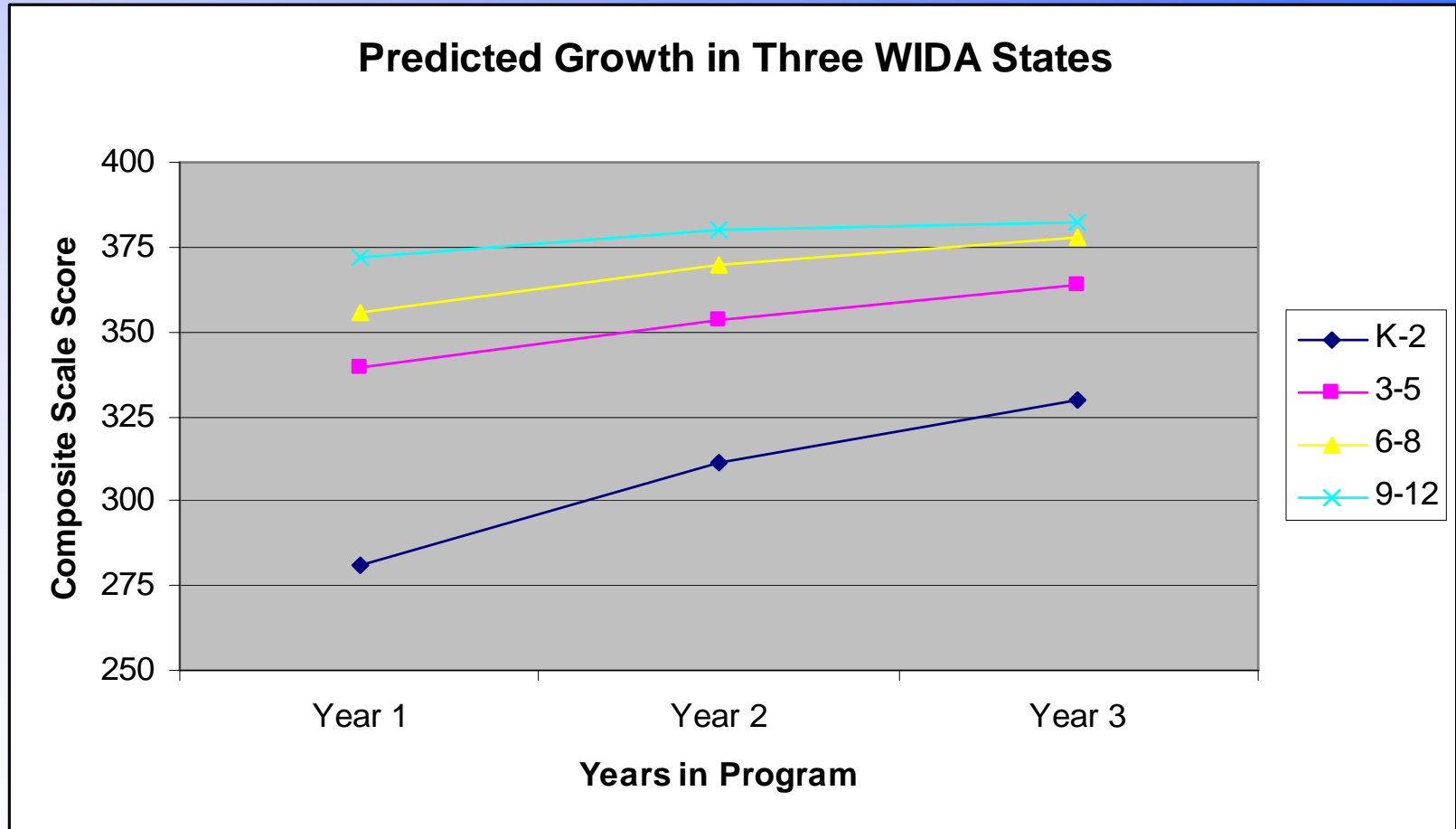
Person-level Model (level-2)

















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Graph of Growth Model

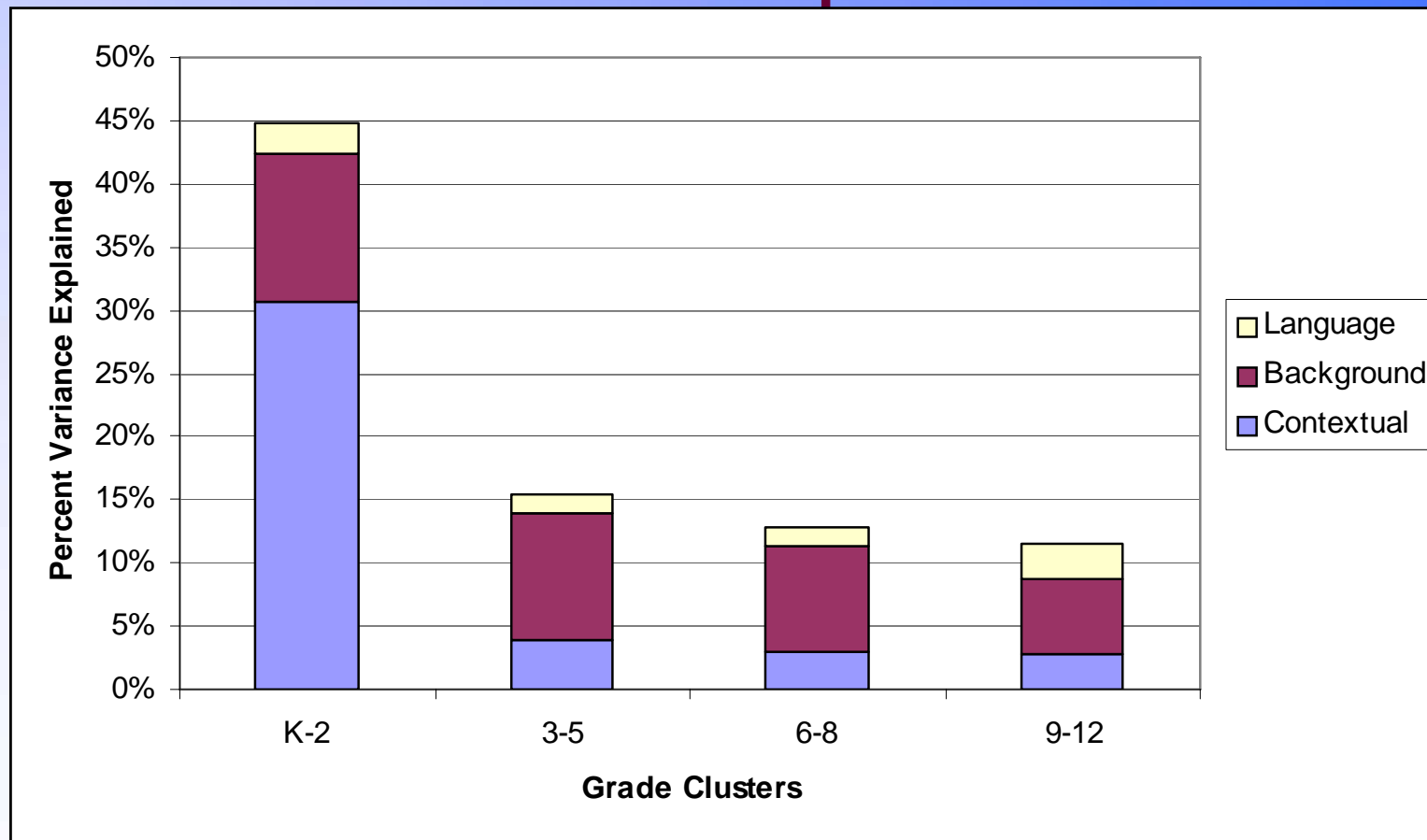


Comparison of Models across Clusters

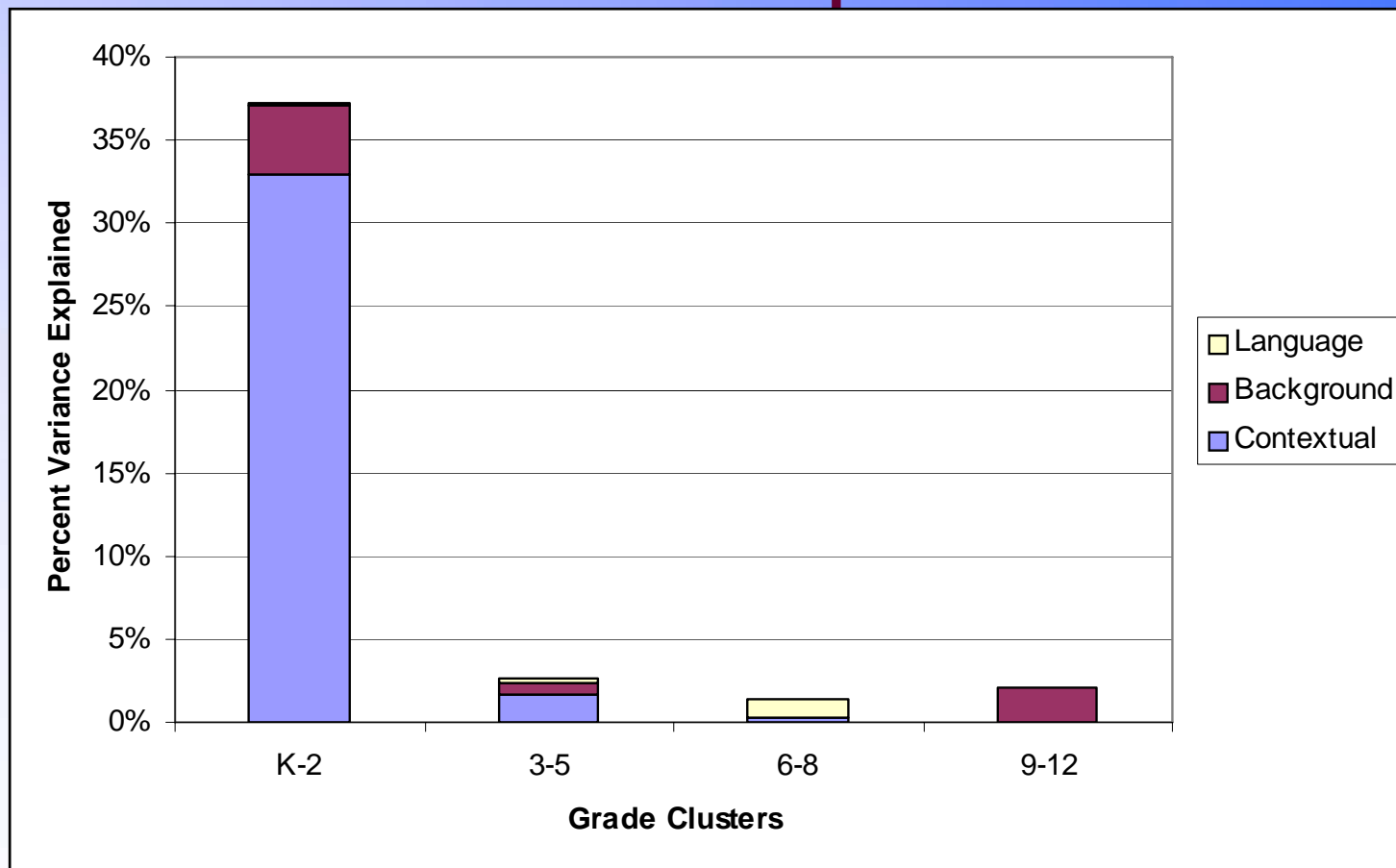
		K-2	3-5	6-8	9-12
<i>Initial Status (Intercept)</i>					
Intercept		184.98 ***	325.99 ***	370.49 ***	428.10 ***
Females		5.57 ***	4.52 ***	4.00 **	4.15 **
Age		18.36 ***	2.87 ***	-0.83	-2.22 ***
Length in ELL program		23.37 ***	8.72 ***	5.09 ***	5.24 ***
State B		-2.58	-5.32 **	3.32	-2.92
State C		1.44	-1.33	9.29 ***	2.79
Pupil/teacher ratio		-0.30	0.15	0.67 *	-0.21
Percent Free and Reduced Lunch		-0.19 ***	-0.21 ***	-0.20 ***	-0.26 ***
Percent of ELL's in the school		-0.33 ***	-0.09 *	-0.19 *	-0.29 **
Spanish is native language		-15.07 ***	-10.72 ***	-9.98 ***	-14.08 ***
Special Education Status		-20.87 ***	-21.73 ***	-18.40 ***	-17.44 ***
<i>Growth Rate (Time Slope)</i>					
Intercept		64.49 ***	20.48 ***	18.20 ***	22.47 ***
Females		0.04	-0.28	-0.59	-1.40
Age		-5.44 ***	-0.71 ***	-0.02	-0.48
Length in ELL program		-8.61 ***	-2.62 ***	-1.26 ***	-1.64 ***
State B		-2.65 **	1.07	-0.78	-4.12 **
State C		0.69	0.37	-1.18	-1.79
Pupil/teacher ratio		0.23 *	0.10	0.04	-0.17
Percent Free and Reduced Lunch		0.03 **	0.03 **	0.01	-0.01
Percent of ELL's in the school		0.11 ***	0.03	-0.04	0.06
Spanish is native language		2.50 ***	0.58	-1.25	2.60 *
Special Education Status		0.46	0.34	1.30	-1.35
<i>Quadratic term (time squared slope)</i>					
Intercept		-5.89 ***	-2.23 ***	-2.96 ***	-2.94 ***

Note: * p<.05. ** p<0.01. *** p<0.001.

Initial Status Model Variance Explained



Growth Model Variance Explained



Conclusions

- Non-linear trajectory
- “Lower is faster; higher is slower.”
- Contextual factors contribute much to K-2 growth model and far less at higher grades.
- Background effects are relatively consistent across clusters.
- Native language contributes only a small amount of explanatory variance .



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Unresolved Issues/Ideas for Future Research

- Selection bias (ELL's who attained English proficiency and left)
- Interactions at level-2: age*length; length*FRL, etc.
- School effects and variances
- Missing variables: Exposure to English, SES, prior educational experiences in home country, Type/quality of ELL program.



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Some Policy Implications

- Children grow and attain English proficiency at different rates by grade cluster and by identifiable groups (AMAO 1 & 2 implications).
- Contextual/institutional factors matter. Learning English is not just a developmental issue.
- Data integrity an issue.



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How might growth findings support our understanding of academic language proficiency?



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Probability Graph

