Effects of Dual-Language Immersion in Portland Public Schools

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About the study

- Partnership of 3 organizations
- 4-year study (2012 – 2016) supported by the U.S. Department of Education’s Institute of Education Sciences Grant # R305E120003
What makes this study important

Portland’s lottery system minimizes selection bias, letting us estimate **causal** effects of immersion programs

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What makes this study important

19 schools
• 10 ES
• 5 MS
• 4 HS

Mixed-methods approach lets us examine implementation across the district

Breadth of programs lets us disaggregate estimates for:
• Native vs. non-native English speakers
• 2-way and 1-way programs
• Spanish vs. other languages
Portland’s program at a glance

- ≈46,000 students districtwide
- ≈10% DLI in 2014-15
- Began DLI 1986
- Elementary schools: 15
- Middle schools: 5
- High schools: 6
- Japanese, Mandarin, Russian, Spanish, Vietnamese
Outline

- Study Context and Motivation
- Empirical Strategy
- Student Achievement Effects
- Principals’ Perspectives
- What’s Next for Immersion in Portland
We examine 7 cohorts of students

Studied kindergarten cohorts 2004–05 through 2010–11

Tracked outcomes through 2013–14 (through grade 8 for oldest two cohorts)
We focused on randomized lottery applicants

DLI applicants 3,457

Randomized 1,946

Assigned to DLI (864)

Not assigned to DLI (1,082)

Non-binding lottery (1,511)

13% attrition

Not observed (112)

Observed (752)

Not observed (209)

19% attrition

Observed (873)

Treatment and Control are Balanced on Observed Characteristics
Lottery estimates in reading were positive and significant in grades 5 and 8.

Estimated effects (SD units)

- **Grade 5:** 7 months of additional reading skills
- **Grade 8:** 9 months of additional reading skills

Solid marks: Significant at 5%  
Hollow marks: Not statistically significant
Lottery estimates in math and science were not statistically distinguishable from zero.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Math ITT</th>
<th>Science ITT</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
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<tr>
<td>5</td>
<td></td>
<td></td>
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<td>6</td>
<td></td>
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<tr>
<td>7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Solid marks: Significant at 5%  Hollow marks: Not statistically significant
Estimates did not differ significantly by program type or native language status

Reading, math, and science estimates were statistically similar for:

<table>
<thead>
<tr>
<th>Two-way</th>
<th>Vs.</th>
<th>One-way programs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spanish</td>
<td>Other languages (Mandarin, Japanese, Russian)</td>
<td></td>
</tr>
<tr>
<td>English learners</td>
<td>Native speakers of other languages</td>
<td></td>
</tr>
<tr>
<td>Students whose native language matches partner language</td>
<td>Students whose native language doesn’t match partner language</td>
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</tr>
</tbody>
</table>

For students whose **native language matches partner language**, reading effects appeared as high as or higher than for native English speakers.
Students randomly assigned to immersion were less likely to be EL by grades 5 & 6

Estimated effects (SD units)

ITT

Solid marks: Significant at 5%  Hollow marks: Not statistically significant
Immersion students reach intermediate partner language proficiency by grade 8

<table>
<thead>
<tr>
<th>Grade</th>
<th>Reading</th>
<th>Listening</th>
<th>Speaking</th>
<th>Writing</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>Advanced mid</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Advanced low</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Intermediate high</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Intermediate mid</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Intermediate low</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Novice high</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Novice mid</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Novice low</td>
<td></td>
<td></td>
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<tr>
<td>0</td>
<td></td>
<td></td>
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</tbody>
</table>

Grade

Reading
Listening
Speaking
Writing

**Spanish**
(n=701)

**Mandarin**
(n=235)

**Japanese**
(n=323)
We collected feedback from principals

Year 1
Interviewed 17 principals

Year 2
Interviewed 15 principals

Key topics
• Teacher quality
• Resources
We collected feedback from principals

- Limited number of licensed candidates with adequate language proficiency
  - Even greater concern in middle and high schools

- Competition for qualified teachers

- Need to hire freely, rather than seniority-based

- Principals emphasized the link between teacher quality and the success of the immersion program
  - Families tend to opt out when dissatisfied with teaching quality
Recap and implications

Students randomly assigned to immersion:

Outperformed their peers in **English reading** in grades 5 and 8, with no detriment to math or science skills

Had lower ELL classification rates by 6th grade

Reached **intermediate** levels of partner-language proficiency by grade 8

But effective replication depends on maintenance of **quality**, including attention to teacher quality and instructional opportunities for language use.
What Is Next for DLI in Portland?

- Paradigm Shift: Why we do DLI
- Expansion
- Teacher Professional Development
Paradigm Shift

RAND

PACIFIC EDUCATIONAL GROUP

Four Agreements
- Stay ENGAGED
- Experience DISCOMFORT
- Speak your TRUTH
- Expect / Accept NON-CLOSURE

Six Conditions
1. Focus on PERSONAL, local and immediate
2. ISOLATE race
3. Normalize SOCIAL CONSTRUCTION & multiple perspectives
4. Monitor agreements, conditions and ESTABLISH PARAMETERS
5. Use a "WORKING DEFINITION" for race
6. Examine the presence and role of "WHITENESS"

Courageous Conversation is utilizing the four agreements, six conditions, and compass in order to engage, sustain, deepen interracial dialogue about race.
Stumbling in the Right Direction...

• PPS Equity Plan Priority Strategy #4 states “Provide instruction for emerging bilingual students in their native language through dual language programs where we have a critical mass of native speakers.” (January 2014)

• **Goal of DLI:** Same as district – close the opportunity gap for Historically Underserved students

• **Strategy:** Dual Language
Stumbling in the Right Direction

Lottery and Student Recruitment

- set aside slots for native speakers in every program
- held spots for native speakers
- set lottery slots that allow for native speakers who are late arrivals
- removed testing for native speakers
- provided transportation
- removed “mandatory” meeting
- Community Agents for recruitment of native speakers
- provided PD for Head Start Community Agents
- adjusted wait lists
Stumbling in the Right Direction...

- Expanding Access:
  - % of ESL students in DLI at Kinder programs climbed from 26% to 37% to 42%
  - % of DLI at Kinder who are Black climbed from 3.77% to 8.25%
  - Native Language Literacy classrooms in Chinese, Spanish and Somali
  - 3 PreK classrooms in Spanish

- Mainstream Paradigm Shift: No more ELA Adoption
  Adopt in all 6 languages
Expansion

• Annual Expansion Committee:
  – Critical Mass of Emerging Bilinguals
  – Achievement Gap
  – Opportunities (Arabic)

• Barriers:
  – Politics (Developing and Applying Equity Lens)
  – Space
  – Qualified and Certified Teachers
Teacher Development

- “Bilingual Teacher Shortage”
- Collaboration with ODE, TSPC and PSU
- Change with ESSA for HQ
- Dual Language Teacher Fellows
- Homegrown
- 3 Week Summer Institute
More Information
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Citations


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