PEER Initial Research Aims

Aim 1: To understand children’s school readiness as measured by the Connecticut Kindergarten Entrance Inventory (KEI)

Preliminary Findings

Michael Strambler, Ph.D.
PEER Stakeholder Meeting
Leir Center
May 9, 2017
KEI Initial Research Questions

• What is the overall performance of children on the Connecticut KEI?

• Are there group differences in performance for gender, socio-economic status (SES), English as a second language status, and race/ethnicity?

• Are there district differences in performance?
The Kindergarten Entry Inventory

• State-developed tool to assess students’ skills at kindergarten entry

• Teacher ratings of student skills in six areas
  – (1) Language Skills; (2) Literacy Skills; (3) Numeracy Skills;
  – (4) Physical/Motor Skills; (5) Creative/Aesthetic Skills; and (6) Personal/Social Skills

• Each domain rated at one of three levels:
  – Level 1: Students at this level demonstrate emerging skills in the specified domain and require a large degree of instructional support.
  – Level 2: Students at this level inconsistently demonstrate the skills in the specified domain and require some instructional support.
  – Level 3: Students at this level consistently demonstrate the skills in the specified domain and require minimal instructional support
Literacy Skills

At what level does the student:

- Hold a book and turn pages from the front to the back
- Understand that print conveys meaning
- Explore books independently
- Recognize printed letters, especially in their name and familiar printed words
- Match/connect letters and sounds
- Identify some initial sounds
- Demonstrate emergent writing
First, Some Caveats

• KEI scores represent teachers’ ratings of students’ skills, not direct assessments of students’ abilities

• The KEI is not designed to be an accountability tool

• For analysis purposes, we treat the KEI like interval data, but we have yet to test how consistent the data are with interval assumptions

• National reference points for gaps in KEI scores are rough comparisons, not precise benchmarks
Kindergarten Entry Ratings

Overall Trends
## Distribution of KEI Ratings 2010-2013

<table>
<thead>
<tr>
<th>KEI Domain</th>
<th>Level 1</th>
<th>Level 2</th>
<th>Level 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Language</td>
<td>22%</td>
<td>40%</td>
<td>38%</td>
</tr>
<tr>
<td>Literacy</td>
<td>23%</td>
<td>39%</td>
<td>38%</td>
</tr>
<tr>
<td>Numeracy</td>
<td>20%</td>
<td>41%</td>
<td>40%</td>
</tr>
<tr>
<td>Physical</td>
<td>11%</td>
<td>40%</td>
<td>50%</td>
</tr>
<tr>
<td>Creative/Aesthetic</td>
<td>11%</td>
<td>40%</td>
<td>50%</td>
</tr>
<tr>
<td>Personal/Social</td>
<td>16%</td>
<td>41%</td>
<td>43%</td>
</tr>
</tbody>
</table>
Kindergarten Entry Skills by Domain

Students Rated Higher on Physical and Creative Domains
KEI Mean Scores, Combined 2010-2013

- Language: 2.16
- Literacy: 2.15
- Numeracy: 2.21
- Physical: 2.39
- Creative Aesthetic: 2.39
- Personal: 2.26
Kindergarten Entry Skills Over Time

Ratings of Entry Skills Stable Over Time
Mean Fall KEI Scores, 2010-2013

2.28 2.27 2.28 2.21

2010 2011 2012 2013
N= 35,598 N=37,501 N=35,044 N=33,109
Kindergarten Entry Ratings

Gender Differences
Gender: Mean Scores

**Girls' Entry Skills Rated Slightly Higher Than Boys'**

*Mean KEI Scores for Boys and Girls, 2010-2013*

<table>
<thead>
<tr>
<th>Year</th>
<th>Girls</th>
<th>Boys</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>2.36</td>
<td>2.21</td>
</tr>
<tr>
<td>2011</td>
<td>2.35</td>
<td>2.19</td>
</tr>
<tr>
<td>2012</td>
<td>2.35</td>
<td>2.21</td>
</tr>
<tr>
<td>2013</td>
<td>2.29</td>
<td>2.14</td>
</tr>
</tbody>
</table>

N= 35,483  37,382  34,994  33,061
Gender: Gaps

Girls' Entry Skills Rated Slightly Higher Than Boys'

Gender Gap in KEI Scores in Standard Deviations, 2010-2013

National gender gap in reading readiness

2010 2011 2012 2013
Kindergarten Entry Ratings

English Learner Differences
English Learners: Mean Scores

English Learners Have Lower Entry Ratings
Mean KEI Scores for English Learner Status

- Non-English Learner:
  - 2010: 2.32 (N=35,483)
  - 2011: 2.31 (N=37,382)
  - 2012: 2.32 (N=34,994)
  - 2013: 2.25 (N=33,061)

- English Learner:
  - 2010: 1.93 (N=35,483)
  - 2011: 1.92 (N=37,382)
  - 2012: 1.93 (N=34,994)
  - 2013: 1.87 (N=33,061)
English Learners: Gaps

**English Learners Have Lower Entry Ratings**

*Gaps in KEI Scores in Standard Deviation Units*

<table>
<thead>
<tr>
<th>Year</th>
<th>KEI Score</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>0.66</td>
<td>35,483</td>
</tr>
<tr>
<td>2011</td>
<td>0.65</td>
<td>37,382</td>
</tr>
<tr>
<td>2012</td>
<td>0.67</td>
<td>34,994</td>
</tr>
<tr>
<td>2013</td>
<td>0.63</td>
<td>33,061</td>
</tr>
</tbody>
</table>

---

*National English Learner Gap*
Kindergarten Entry Ratings

Free & Reduced Lunch Differences
Free & Reduced Lunch: Mean Scores

Children with Free and Reduced Lunch Have Lower Entry Ratings

Mean KEI for Free/Reduced Lunch Status

- Not Eligible
  - 2010: 2.40 (N=35,483)
  - 2011: 2.39 (N=37,382)
  - 2012: 2.42 (N=34,994)
  - 2013: 2.35 (N=33,061)

- Reduced
  - 2010: 2.12 (N=35,483)
  - 2011: 2.14 (N=37,382)
  - 2012: 2.18 (N=34,994)
  - 2013: 2.10 (N=33,061)

- Free
  - 2010: 2.03 (N=35,483)
  - 2011: 2.04 (N=37,382)
  - 2012: 2.06 (N=34,994)
  - 2013: 2.00 (N=33,061)
Free & Reduced Lunch: Gaps

Children with Free and Reduced Lunch Have Lower Entry Ratings

KEI Gaps in Standard Deviations, 2010-2013

- **Free vs. Ineligible**: 0.64, 0.59, 0.62, 0.58
- **Reduced vs. Ineligible**: 0.48, 0.44, 0.42, 0.43

National 90/10 Gap

2010: N=35,483
2011: N=37,382
2012: N=34,994
2013: N=33,061
Kindergarten Entry Ratings

Racial/Ethnic Differences
Race/Ethnicity: Mean Scores

Racial/Ethnic Minorities are Rated Lower on Entry Skills
Mean KEI Scores by Group, Combined 2010-2013

- Hispanic Any Race (N=33,910) 2.04
- Black (N=33,910) 2.10
- Nat. Hawaiian or PI (N=115) 2.21
- American Indian (N=383) 2.26
- Two or more (N=4,238) 2.28
- Asian (N=17,067) 2.33
- White (N=77,863) 2.38
Race/Ethnicity: Gaps

Racial Gaps in Entry Ratings are Largest for Latinos & Blacks
Race/Ethnicity Gaps in KEI Scores Measured in Standard Deviations

Latino-White Gap
- 0.56 in 2010
- 0.50 in 2013

Black-White Gap
- 0.58 in 2010
- 0.48 in 2013

White-Asian Gap
- 0.06 in 2010
- 0.13 in 2013

N= 35,483 (2010)
N= 37,382 (2011)
N= 34,994 (2012)
N= 33,061 (2013)
Kindergarten Entry Ratings

District Factors
District Size

The Largest Districts Have Lower Entry Ratings

District Mean KEI by District Kindergarten Size (Quartiles)
Free Lunch Status

Districts in Poorest Communities Have Lower Entry Ratings

District Mean KEI by District % of Kindergarten Students with Free Lunch (Quartiles)

Percent of Students with Free Lunch Status

Quartile 1: 2.46
Quartile 2: 2.55
Quartile 3: 2.33
Quartile 4: 2.17