Effects of Individualized Instructional Feedback on Early Caregiver Practices, Provider Quality, and Child Outcomes

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STUDY MOTIVATION

- Early investments in children’s lives matter
  \( (\text{Chetty et al., 2011; Deming, 2009; Heckman, Moon, Pinto, Savelyev, & Yavitz, 2010; Vandell, Belsky, Burchinal, Steinberg, & Vandergrift, 2010; Votruba-Drzal, Coley, Maldonado-Carreño, Li-Grining, & Chase-Lansdale, 2010}) \)

- Advances in defining early care and education (ECE) quality
  \( (\text{Dickinson, 2011; Pianta et al., 2005; Sabol, Soliday Hong, Pianta, & Burchinal, 2013}) \)

- Still low levels of classroom quality in many ECE programs
  \( (\text{Burchinal, Vandergrift, Pianta, & Mashburn, 2010}) \)
ECE QUALITY IMPROVEMENT STRATEGIES

Early learning and program standards

Kindergarten Entry Assessments

Quality Rating and Improvement Systems

Professional development trainings

Coaching and mentoring
Primary Purposes:

- Examine state-level preschool program capacity
- Identify preschool teacher professional development needs

Secondary Purposes:

- Feedback to classroom teachers
- Feedback to building administrators
### The Early Language and Literacy Classroom Observation (ELLCO) Classroom Report - Fall 2010

<table>
<thead>
<tr>
<th>Name: &lt;Excluded&gt;</th>
<th>Adults in classroom:</th>
<th>Children in classroom:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date: 4/13/2010</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Site: 3460</td>
<td>Boys: 3</td>
<td>Girls: 2</td>
</tr>
<tr>
<td>Student Teacher:</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>English lang. learners:</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Years of Classroom Experience:</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>Assistant Teacher:</td>
<td>2</td>
<td>Total number enrolled: 12</td>
</tr>
<tr>
<td>High Degree/Credential:</td>
<td>Education Specialist</td>
<td>Parent: 1 Other:</td>
</tr>
</tbody>
</table>

#### General Classroom Environment

<table>
<thead>
<tr>
<th>Description</th>
<th>Minimal Evidence (1)</th>
<th>Some Evidence (2)</th>
<th>Strong Evidence (3)</th>
</tr>
</thead>
</table>

#### Organization of the Classroom

- Comments: Defined learning areas are present; no running path evident; learning centers separated by shelving; materials were accessible to children; boxes of cabinets were covered by supplies/materials; furniture was UNI sized; some learning centers did not allow for larger groups of children; learning centers were labeled with center name.

#### Contents of the Classroom

- Comments: Some child art and dictation was displayed above child eye level; materials were not labeled; contents on open shelves and accessible to children; materials were grouped by learning center; materials were related to what teacher indicated was the current topic(s).

#### Presence and Use of Technology

- Comments: One computer present and turned on; headphones present and teacher stated books on tape are used; teacher stated preschool games are used on computer; 4 phones present in dramatic play; teacher stated children could choose to use computer; adaptive mouse present at computer; teacher stated digital camera is used with children; CD player was present but out of reach of children; touch pad was present for a child at the snack table.

#### Opportunities for Child Choice and Initiative

- Comments: All children were writing in notebooks at circle time upon observers' arrival; snack was already laid out and every child ate snack at the same time; free play is listed on the schedule; teacher stated books were available to children on an individual basis.

#### Classroom Management Strategies

- Comments: Teacher used picture schedule to inform children what came next; soft music was playing in the background; teacher invited a child to come over but did not force the child to join the group; teacher used a sand timer to indicate the end of the current activity; teacher reviewed classroom rules with children before beginning circle time; towards the end of circle time, teacher gave verbal reminders for children to return to their seats and to be quiet.

### Approaches to Assessment

- Comments: The observations did not observe any assessment practices or materials. During the interview the teacher stated that she used phone calls and daily drop off/ pick-up times to talk with parents about behavior. She stated that she used the anecdotal records to track children's progress and had the district's guidance counselor review these records. She also stated that she uses the Creative Curriculum for her classroom. Her assessment is based on the Creative Curriculum assessment tool that she uses to assess children's progress in the classroom. She stated that she uses the Early Years Literacy Assessments and enters them into the Creative Curriculum website and would get a print out of what had been learned and what needed to be reviewed. She also stated that she uses the CCRI and Core RI assessment. She said she meets regularly with the speech-language therapist for guidance on children.
<table>
<thead>
<tr>
<th>ECE Program Type</th>
<th>Number of Preschool Classrooms Observed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early Learning Initiative (ELI)</td>
<td>348</td>
</tr>
<tr>
<td>Early Childhood Education (ECE)</td>
<td>121</td>
</tr>
<tr>
<td>Preschool Special Education (PSE)</td>
<td>735</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>1204</strong></td>
</tr>
</tbody>
</table>

*Note. 248 of these classrooms also observed a second time.*
Lottery X

Teachers randomly selected

Teachers not selected
COVARIATE BALANCE FOR ANALYTIC SAMPLE WITH POST-TREATMENT ELLCO OUTCOME DATA

Years of teaching experience (at baseline)

Age (at baseline)

New teacher (3 yrs or less at baseline)

Master’s degree or higher

Gender: Female

Race: Black

Race: White

Treated

Control (n=615)

Treatment (n=175)

** p<0.01, * p<0.05, + p<0.1
What is the impact on Classroom Quality?

Research Question 1
**POSITIVE EFFECTS ON CLASSROOM QUALITY FOR NEW TEACHERS**

**ELLCO Outcomes on ITT Treatment Status: Teacher Experience**

- Classroom Observation Total Score
- General Classroom Environment
- Language, Literacy and Curriculum

**Treatment Effect Sizes (Standard Deviation Units)**

- **Overall**
- **New teachers**
- **Experienced teachers**

**p<0.01, * p<0.05, + p<0.1**

790 teachers
242 Lottery X Post-treatment measurement round fixed effects
What is the impact on Provider Quality?

Research Question 2
POSITIVE EFFECTS ON PROVIDER QUALITY

OLS Regressions of SUTQ Rating on Indicator of Any Teachers Treated in Provider to Date with Sample Consistent across Years

** p<0.01, * p<0.05, + p<0.1

Year Before to Year After Treatment (N=706)
Year Before to Two Years After Treatment (N=612)
What is the impact on *Children*?

Research Question 3
POSITIVE EFFECTS ON CHILDREN FROM CLASSROOMS WITH NEW TEACHERS WHO RECEIVED FEEDBACK

** Treatment Effect Sizes (Standard Deviation Units)

- ** p<0.01, * p<0.05, + p<0.1

** OLS Regressions of Direct Child Language and Literacy Measures from First Post-treatment Cohort on ITT Treatment Status

- ** GGG-Picture Naming (N=66,019)
- ** GGG-Rhyming (N=26,255)
- ** GGG-Aliteration (N=14,611)
- ** KRA-L (N=16,172)

Overall New teachers Experienced teachers

** p<0.01, * p<0.05, + p<0.1
Light-touch individualized feedback can change instructional practice quality for some ECE teachers.

Differential treatment effects motivate additional investigations.
MY SINCERE APPRECIATION TO:
DIANE WHITMORE SCHANZENBACH, NORTHWESTERN UNIVERSITY
JONATHAN GURYAN, NORTHWESTERN UNIVERSITY
TERRI SABOL, NORTHWESTERN UNIVERSITY
TRACEY CHESTNUT, OHIO DEPARTMENT OF JOB AND FAMILY SERVICES
WENDY GROVE, OHIO DEPARTMENT OF EDUCATION
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Appendix Slides
LIMITATIONS

Generalizability

- Intervention implemented in one state and at one point in time
- Sample teacher characteristics not representative of all ECE staff

Limitations of available outcome measures
ELLCO ELEMENTS –
GENERAL CLASSROOM ENVIRONMENT

1. Organization of the Classroom
2. Contents of the Classroom
3. Presence and Use of Technology
4. Opportunities for Child Choice & Initiative
5. Classroom Management and Strategies
6. Classroom Climate

ELLCO ELEMENTS – LANGUAGE, LITERACY, AND CURRICULUM

7. Oral Language Facilitation
8. Presence of Books
9. Approaches to Book Reading
10. Approaches to Children Writing
11. Approaches to Curriculum Integration
12. Recognizing Diversity in the Classroom
13. Facilitating Home Support for Language Literacy
14. Approaches to Assessment
Natural Random Assignment (RQ1 – Control)

Lottery X

Teachers randomly selected (1st obs.)

Teachers randomly selected (2nd obs. – Treatment)

Teacher not selected or observed

Teachers randomly selected (1st obs. Control)

Teacher not selected or observed

Randomization Feedback Report Randomization Feedback Report

Time 1 Time 2
THEORETICAL FRAMEWORK

Individualized Feedback → Increased Awareness of Needs (& Strengths) → Effort to Address Needs → Improved Classroom Quality → Improved Child Outcomes

Sharing Best Practices with Colleagues → Improved Provider Quality
OUTCOME MEASURES

- Early Language and Literacy Classroom Observation Tool (ELLCO), Research Edition *(Smith, Dickinson, Sangeorge, & Anastasopoulos, 2002)*

- Ohio’s Step Up To Quality (SUTQ) ratings

- Get it! Got it! Go! *(McConnell & McEvoy, 2013)*

- Ohio’s Kindergarten Readiness Assessment-Literacy (KRA-L)

- Ages and Stages Questionnaire: Social Emotional (ASQ:SE) *(Squires & Twombly, 2002)*
## Analytic Samples by Outcome

<table>
<thead>
<tr>
<th></th>
<th>Number of Non-degenerate Lotteries</th>
<th>Number of Teachers</th>
<th>Number of Treatment Teachers</th>
<th>Number of Control Teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full Sample</td>
<td>413</td>
<td>8,088</td>
<td>1,568</td>
<td>6,520</td>
</tr>
<tr>
<td>Analytic Sample for Classroom Outcomes</td>
<td>74</td>
<td>790</td>
<td>175</td>
<td>615</td>
</tr>
<tr>
<td>Analytic Sample for Provider Outcomes</td>
<td>238</td>
<td>2,914</td>
<td>603</td>
<td>2,311</td>
</tr>
<tr>
<td>Analytic Sample for Child Outcomes</td>
<td>228</td>
<td>4,351</td>
<td>840</td>
<td>3,511</td>
</tr>
</tbody>
</table>

Note: The numbers provided are unduplicated within lottery. However, teachers may be counted more than once if they were included in more than one lottery within or across rounds.
EFFECTS DID NOT VARY BY LEVEL OF EDUCATIONAL ATTAINMENT

ELLCO Outcomes on ITT Treatment Status: Education Level

** p<0.01, * p<0.05, + p<0.1

790 teachers
242 Lottery X Post-treatment measurement round fixed effects
QUALITY INCREASED TO A GREATER EXTENT FOR PROVIDERS WITH MORE TEACHERS TREATED

2SLS Regressions of SUTQ Rating on Proportion of Treated Teachers Instrumented by Teacher Treatment Status and Teacher Covariates