Using Intervention and Implementation Fidelity Frameworks to Study Variations in Implementation of Quality Interventions (VIQI)

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CCEEPRC 2018 Annual Meeting
February 8, 2018
VIQI Project Goals

• To look at the causal effect of dimensions of quality on child outcomes

• To determine whether there are thresholds in this effect (non-linearity)

• To understand variation in impacts and implementation of quality enhancement efforts across ECE setting types and across initial levels of quality
VIQI Project Approach

• Pilot study followed by full-scale study
• Multi-group random assignment design
• Head Start and community-based settings with mixed-age, 3- and 4-year-old classrooms
• Assignment to different curricular and professional development models as vehicle for inducing change in different dimensions of quality and in child outcomes
VIQI’s Process Study
Research Questions

<table>
<thead>
<tr>
<th>Sample characteristics:</th>
<th>What are the characteristics of participating centers, staff, and children? Which characteristics are drivers of fidelity of implementation? How do these drivers relate with each other?</th>
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</thead>
<tbody>
<tr>
<td>Implementation systems:</td>
<td>What implementation systems support the delivery of the interventions in classrooms? How much variation is there in participation of these supports? What drivers seem to support or inhibit participation?</td>
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<tr>
<td>Fidelity of implementation:</td>
<td>To what degree are the interventions delivered as intended? How much variation is there in fidelity of implementation of the interventions? What drivers seem to facilitate or inhibit successful implementation and fidelity to the intended intervention models?</td>
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<td>Service contrast:</td>
<td>What is the relative treatment contrast achieved in teacher practices targeted by the interventions?</td>
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</tbody>
</table>
Intervention Framework

Inputs

Drivers

Macro-/Community-Level Drivers

Program Administrative-Level Drivers

Center-Level Drivers

Intervention

Curricular Model

Professional Development Model

Technical Assistance and Support

Outputs

Services delivered (curricular activities)

Services received (professional development & TA)

Short-term

Outcomes

Teacher Knowledge and Beliefs

Understand teaching priorities of model

Co-teacher collaboration

Process Quality

Instructional Quality

Longer-term

Children's Cognitive and Pre-Academic Competencies

- Rote/basic skills
- Higher-order/unconstrained skills

Children's Behavioral, social & emotional competencies

Macro-/Community-Level Drivers

Program Administrative-Level Drivers

Center-Level Drivers

Leadership Drivers

Implementation System

Organization Drivers

Competency Drivers

System Drivers

Leadership Drivers

Professional Development Model

Technical Assistance and Support
Implementation Framework

• Takes an ecological systems approach

• Utilizes the National Implementation Research Network frameworks (NIRN, 2016) as a base to provide a wider picture of the proximal and distal drivers of implementation
Implementation Framework

Inputs

Drivers

Macro-/Community-Level Drivers
Federal, state, district, community policies, practices, regulations, funding

Program Administrative-Level Drivers
Policies, practices; Administrative buy-in

Center-Level Drivers

- Leadership Drivers
  - Leadership style
  - Buy-in
  - Facilitation of professional supports/time

- Systems intervention
  - Funding, capacity to provide coverage
  - Sufficient facilities, materials, equipment
  - Center policies, practices

- Facilitative administration
  - Center readiness
  - Climate, turnover
  - Population served
  - Staffing structure

- Competency Drivers
  - Staff selection*
    - Credentials, experience
    - Knowledge, beliefs
    - Readiness/motivation
    - Stress/burnout
    - Teaching priorities

- Organization Drivers
  - Implementation System
    - Professional development
    - Curricular activities/materials
    - Assessment tools
    - Data infrastructure
    - Other administrative supports

Intervention

Curricular Model
- Curricular materials
- Curricular content

Professional Development Model
- Training
- Coaching

Technical Assistance and Support

*Includes center administrators, lead teachers, and coaches
Implementation Framework

Inputs
Drivers

Macro-/Community-Level Drivers
Program Administrative-Level Drivers
Center-Level Drivers

Leadership Drivers
Organization Drivers
Competency Drivers

Implementation System

Intervention
Curricular Model
Professional Development Model
Technical Assistance and Support

Outputs

Services delivered (curricular activities)
Services received (professional development & TA)
VIQI Measurement Approach: Example

Competency Drivers
- **Staff selection**
- Staff credentials, experience, prior PD
- Staff knowledge & beliefs
- Coaching competency and styles
- Center readiness
- Burnout and stress
- **Training**
- **Ongoing coaching and supervision**

Leadership Drivers
- Leadership
- Facilitation of time/professional supports for teachers

Macro-/Community-Level Drivers

Program Administrative-Level Drivers

Center-Level Drivers

Implementation System

Drivers

Organization Drivers
- Systems intervention
- Funding and capacity
- Sufficient facilities, materials, equipment
- Facilitative administration
- Center policies and practices
- Center climate
- Turnover
- Population served
- Staffing structure

Implementation System
- Professional development
- Curricular activities and materials
- Assessment tools
- Existing data infrastructure
- Other administrative supports
Summary

• Created a conceptual model that took into account an implementation fidelity framework

• Used the framework to guide our measurement approach

• Plan to use the framework to interpret findings