

Child Care and Early Education Quality Features, Thresholds and Dosage and Child Outcomes (Q-DOT): Study Design

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Project Description.

This two-and-a-half year design project will examine associations between the quality of early care and education settings and child outcomes, asking whether certain thresholds of quality or dosage need to be met or particular aspects of quality need to be present before links are apparent. The project is intended to provide guidance to ACF, other federal agencies and other stakeholders to guide new research on the quality of early care and education; support quality improvement initiatives and practice; and inform policy decision-making at the state and national levels. The project will focus on center-based settings serving children from birth through age 5, focusing on children from low-income families.

Research questions

- *What specific features of quality in center-based early care and education for children from birth to age five lead to gains in child outcomes?*
- *Are there thresholds of quality above and below which the strength of the associations between quality and child outcomes differ? For example is there a level of quality above which improvements are associated with accelerated gains in child outcomes?*
- *Is there a minimum threshold of quality necessary to affect child outcomes?*
- *Do greater dosages of quality care lead to greater gains in child outcomes?*
- *How do quality features, thresholds and dosage relate independently to child outcomes? In relation to one another?*
- *How well are existing measures of quality care capturing these thresholds and dosages?*

Progress Update.

Literature Review. A systematic review of the literature yielded 39 studies meeting criteria of having measures of quality as well as child outcomes, including at least 10 center-based sites, including children from infancy through kindergarten entry, and published in peer-reviewed journals or government reports.

Findings: A small set of studies indicate that when children participate in higher quality care to a greater extent, child outcomes are more positive for both cognitive and social-emotional outcomes. There is emerging evidence that the association between quality and outcomes is stronger in the higher ranges of quality. The terminology of an “active range” has been used to describe the threshold above which incremental improvements in quality are associated with improvements in child outcomes. The project team labeled three levels of specificity in quality measures: *global, teacher-child interaction specific, and domain specific*. There is some evidence that the association between quality and outcomes may be stronger when there is closer alignment between specific quality measures and child outcomes.

Secondary Data Analysis: Thresholds. A comprehensive secondary analysis of data from 8 studies was conducted. Meta- analyses were conducted as possible to ascertain whether specific patterns were apparent across datasets. **Findings:** Results showed that global quality (Early Childhood Environment Rating Scale-Revised, or ECERS-R, Total) was a stronger predictor of child language skills in higher quality than in lower quality classrooms in two studies, but the finding did not hold in the meta-analysis. There was evidence of thresholds for the ECERS-R Teaching and Interactions factor in relation to language, social skills, and behavior problems, as well as for the Classroom Assessment Scoring System

(CLASS) Instructional Support domain in relation to language and literacy. Further patterns examined only in single studies found evidence of thresholds for the Teacher Behavior Rating Scale (TBRS) in relation to language, math and literacy and for the Observation Measures of Language and Literacy Instruction (OMLIT) in relation to phonological skills.

Secondary Data Analysis: Dosage. Dosage was defined currently--as time spent in a particular instructional domain or hours per week in care, as well as cumulatively--as one versus two years of enrollment in Head Start.

Findings: Instructional time in literacy was positively associated with literacy outcomes and time in math with math outcomes, for two studies each. More hours per week in care, by parent report, were associated with higher literacy scores and more behavior problems in two studies, and with higher language scores in two studies. Thus, higher dosage is consistently associated with better cognitive outcomes, but not consistently with more behavior problems across studies.

Using a propensity score matching approach, children who entered Head Start at age 3 and experienced two years of the program scored significantly better in vocabulary, letter knowledge, early writing, math (two measures), social skills, and behavior problems than those who entered at age 4, both at the end of Head Start and in the spring of their kindergarten year.

Implications for policy/practice

While there is some evidence for thresholds, especially in measures of instructional quality, and of better prediction to child outcomes from more

specific quality measures, the evidence is not overwhelming. There is no confirmation of “good enough” quality, but rather of an “active range.” Thus, programs should focus on improving lower-quality programs into this active range as a first step, and then encourage continuous improvement within the higher-quality range.

Implications for research

Further analysis or new data collection could explore: (1) whether children show stronger outcomes when they have greater exposure to quality with specific features, such as instructional time spent on specific domains; (2) what combination of early childhood quality above a certain level of quality, with certain features or focus, and with sufficient dosage, would help children reach a level of skills at school entry that would prepare them for positive school outcomes.

For more information:

The literature review summary and tables are available online at:

http://www.acf.hhs.gov/programs/opre/cc/q_dot/index.html

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