

Stated Briefly

# Data collection and use in early childhood education programs: Evidence from the Northeast Region



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In collaboration with the Early Childhood Education Research Alliance

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This study explores how early childhood education programs are collecting and using data, how they would like to use data, how they could use the data that they have, and the challenges they face in these efforts. Administrators and teachers at seven preschools in a mid-sized city in the Northeast Region were interviewed about their data practices. Participating preschools used a variety of externally and internally developed systems to collect data on early learning outcomes, dosage (the amount of time children spend in early childhood education), and classroom quality. The preschools also provided data on early learning outcomes and dosage to parents, but some administrators and teachers had concerns about effective strategies for communicating findings from the data. The preschools reported collecting sufficient data and generally do not want to collect more data.

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This Stated Briefly report is a companion to the full report, Zweig, J., Irwin, C. W., Kook, J. F., & Cox, J. (2015). *Data collection and use in early childhood education programs: Evidence from the Northeast Region* (REL 2015–084). Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance, Regional Educational Laboratory Northeast & Islands. Retrieved from <http://ies.ed.gov/ncee/edlabs>.



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## **Why this study?**

Both federal and state policies increasingly require early childhood education practitioners to collect and use data within their programs (Stein, Freel, Hanson, Pacchiano, & Eiland-Williford, 2013). Research shows that early childhood education practitioners use data to monitor students' learning and growth, examine progress toward state and district standards, become more knowledgeable about their own capacities, and develop plans for improvement (Crommey, 2000, and Earl & Katz, 2006, as cited in Datnow, Park, & Wohlstetter, 2007). Despite the increasing policy expectations for research-based practice and data-driven decision-making in early childhood education (Yazejian & Bryant, 2013), there is little research on the kinds of data that preschool educators collect and how they use data to enhance practice and inform decisionmaking.

This study explores how early childhood education programs are collecting and using data, how they would like to use data, how they could use the data that they have, and the challenges they face in these efforts. It was conducted in collaboration with the Early Childhood Education Research Alliance at the Regional Educational Laboratory Northeast & Islands. The alliance, which comprises state education leaders, prioritized a study examining the collection and use of data in preschools. Alliance members served as advisors on the study design and report. The audience for this study includes administrators of early childhood education programs who are seeking to develop or enhance their data systems, policymakers who are considering policies to increase data-informed decisionmaking in preschools, and education leaders who are interested in advancing their data structures to answer more complex questions about early childhood education experiences and outcomes in K–12.

## **What the study examined**

This study examined the data collected by early childhood education administrators and teachers in a mid-sized city in the Northeast Region; how they use the data they collected; and the challenges they face in collecting and using data. Based on previous research showing that dosage and classroom quality are positively associated with early learning outcomes (see, for example, Burchinal, Kainz, & Cai, 2011; Burchinal et al., 2009; McCartney et al., 2010; NICHD Early Child Care Research Network, 2000; Peisner-Feinberg et al., 2001; Robin, Frede, & Barnett, 2006), this study focused on early learning outcomes, dosage, and classroom quality. Data on these topics have the potential to inform decisions about children, teachers, and early childhood education programs in general.

## **How the study was conducted**

The study team conducted face-to-face interviews with administrators and teachers from a convenience sample of seven preschool programs in a mid-sized city in the Northeast Region. The participating preschools are state-licensed, center-based programs that accept children full-time, serve at least 40 preschool-age children (defined by the state to be 33 months to 5 years old), and operate in the study city or a town within 10 miles of the study city. Interviewees reported on the availability and use of data on early learning outcomes, dosage, and classroom quality. The study team analyzed interview transcripts and determined the main themes by examining all responses aligned to research questions about the type of data collected and data use (box 1). The study team also analyzed child and classroom data from two of the preschools at which interviews were conducted in order to illustrate the potential advantages and challenges of using data; the results of that analysis are available in the full report (Zweig, Irwin, Kook, & Cox, 2015).

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## Box 1. Research questions

The following research questions guided the study:

- What data do administrators and teachers from a sample of preschools collect on early learning outcomes, dosage, and classroom quality?
  - How do these administrators and teachers use the data they collect?
  - How would these administrators and teachers like to use the data they collect?
  - What challenges do these administrators and teachers face in collecting and using data on early learning outcomes, dosage, and classroom quality that can inform policy or practice?
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## What the study found

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Participating preschools used a variety of systems to collect data, but some had concerns about effective strategies for communicating findings from the data. Generally, preschools indicated that they considered the data they were collecting to be sufficient.

### **The participating preschools used various systems, both externally and internally developed, for collecting data on early learning outcomes, dosage, and classroom quality**

Administrators and teachers at all seven preschools reported using ongoing, performance-based assessments of early learning outcomes. Four of the preschools used externally developed, commercially available assessment systems, including Teaching Strategies GOLD (Teaching Strategies, Inc., 2012) and the Work Sampling System (Meisels, Marsden, Jablon, Dorfman, & Dichtelmiller, 2012). The remaining three preschools relied on internally developed systems for collecting data on child outcomes, including anecdotal notes and work samples for children's portfolios.

The participating teachers were supported in a variety of ways in collecting data on early learning outcomes. Among teachers using Teaching Strategies GOLD, one reported that she had attended a formal training, one reported that only the administrator had attended but that the preschool planned to send all teachers for training in the future, and one reported completing an online training and meeting annually with the administrator and colleagues to review the system. The teacher using the Work Sampling System attended a formal course at a local teachers college. Finally, the three preschools that used internally developed systems relied more heavily on teachers to devise their own systems for collecting data. One teacher talked with other teachers, and one regularly met with the administrator.

Similarly, administrators at all seven preschools indicated that they regularly observed teachers to collect information about classroom quality, though their methods ranged in formality. Three preschools used the Early Childhood Environment Rating Scale—Revised (Harms, Clifford, & Cryer, 1998), an externally developed instrument; two of these preschools also used a second instrument, the Arnett Caregiver Interaction Scale (Arnett, 1989) or the Classroom Assessment Scoring System (Pianta, La Paro, & Hamre, 2008). One administrator described an internally developed instrument that assessed four domains (classroom environment, interactions, planning and preparation, and personal qualities), and another administrator completed an open-ended form after each teacher observation that included notes and recommendations. The remaining preschools conducted informal observations without using an observation instrument. All teachers reported that they received feedback about their practice and felt supported by preschool staff—either directors or mentors.

Administrators at all the preschools reported that they collect daily attendance data—one measure of dosage—on all children. At six preschools, teachers collected attendance data using hard-copy binders or sign-in sheets that they submitted to their administrator to file as hard copies or enter into a digital database for storage purposes. At one preschool, teachers simultaneously collected and entered attendance data directly into a digital database. Preschool administrators indicated that they considered the collection process to be adequate for reporting to the state.

### **Data on early learning outcomes and classroom quality were used to inform instruction and practice**

Administrators and teachers at all seven preschools reported using data on early learning outcomes to inform instruction and practice. One teacher explained that she used such data to determine what she needed “to work on.” Teachers reported that collecting data on early learning outcomes helped them track children’s progress and set appropriate learning goals. One teacher described an ongoing process of setting learning goals, using outcome data to determine whether those goals were reached, and then setting new goals as necessary.

Similarly, seven administrators and six teachers indicated that they used classroom quality data to reflect on and improve their teaching practice. For example, one administrator stated that the purpose was “to reflect on what they’re doing in the classroom and make any adjustments to either their classroom management, the way that they’re interacting with children, or what they’re actually presenting for activities to the children to help [them] develop.” One of the teachers described taking notes during meetings with the administrator to know what areas needed work and then addressing those areas the next day.

### **All participating preschools provided data on early learning outcomes and dosage to parents, but some had concerns over effective strategies for communicating those findings**

Administrators at all seven preschools required early learning outcomes to be reported to parents, although the method of delivery varied. The three preschools that used internally developed systems relied more heavily on teachers to devise their own systems for presenting information to parents. The three preschools that used assessment systems provided teachers with quantitative output data for parents, but all administrators reported that they encountered difficulty in knowing how best to communicate the data to various stakeholders. They described challenges with appropriately framing results for parents, grant-funding agencies, and the general public in ways that provided sufficient detail but were also easy to understand and not laden with jargon or complex figures.

With regard to dosage, six administrators indicated that they reach out to parents of children who are frequently absent to report attendance data and provide information about state policies related to absenteeism. Four preschool administrators reported that they were interested in linking attendance data to early learning outcomes. As one administrator explained, “If children are not here, they are not getting the instruction or the experiences.” That administrator wanted to be able to show parents the consequences of absenteeism.

The participating preschools indicated that overall they considered the data they were collecting to be sufficient. Few teachers reported that they wanted to collect additional data on early learning outcomes, dosage, or classroom quality. One administrator stated a desire to collect additional data on children’s behavioral, social, and emotional outcomes, and one teacher who used an internally developed assessment system reported that she thought collecting data through an externally developed assessment system might be beneficial. All other interviewees indicated that they did not see a need to collect additional early learning outcome data. Likewise, none of the teachers or administrators at the seven preschool programs wanted

to collect additional dosage data. When asked whether they would like to collect additional classroom quality data, one administrator and one teacher from two different preschools indicated that they would like to conduct more formal observations, but that there was not enough time to do this.

### **Implications for policy and practice**

There are four main implications of this study:

- *Early childhood education programs may benefit from guidance on effective methods for presenting information to parents about children's progress and about the importance of attending preschool.* The participating preschools used data on early learning outcomes and attendance for outreach to parents; however, they expressed difficulty in knowing how best to present data to varying audiences.
- *Preschool administrators could benefit from more state guidance about successful data practices and structures.* According to the Early Childhood Data Collaborative (2014), 32 states have designated an early childhood education data governance entity to guide the development and use of state-coordinated longitudinal early childhood education data systems. These governance structures could help guide preschools as they collect and use data.
- *Before instituting additional requirements for data collection, policymakers may want to weigh the benefits of additional data collection against the needs of practitioners and the time required to collect the information.* Regardless of the instruments used or methods for collecting data on early learning outcomes, dosage, or classroom quality, the participating preschools generally did not want to collect additional data. Administrators and teachers considered their current data collection efforts to be sufficient.
- *Further research is needed to determine the most promising methods of practitioner data use that may lead to better outcomes for children.* The participating preschools employed a variety of methods to collect and use data on early learning outcomes, dosage, and classroom quality. Although preschools could draw on existing research on data use in K–12 education, evidence on what data use methods in K–12 education help improve student achievement is inconclusive (Hamilton et al., 2009).

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