Early Childhood Teachers' Use of Ongoing Child Assessment to Individualize Instruction

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Tailored Teaching: The Need for Stronger Evidence About Early Childhood Teachers' Use of Ongoing Assessment to Individualize Instruction

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This is one of a series of briefs about ongoing assessment for individualizing instruction.

This brief describes a review of the literature on ongoing assessment in early childhood settings for researchers and practitioners.

An additional brief titled "What Do We Know About How Early Childhood Teachers Use Ongoing Assessment?" succinctly summarizes findings from the review of the literature for practitioners.

Finally, the brief "What Does it Mean to use Ongoing Assessment to Individualize Instruction in Early Childhood?" provides a conceptual framework that shows practitioners and researchers how practitioners can use ongoing assessment for individualization.

The use of assessments in early childhood education (ECE) has grown significantly over the past two decades. For many years, summative assessments were the most common type of assessment. They measure children's developmental status at specific points in time, such as in the spring of each year, and show how children perform relative to peers or to specified criteria. However, practitioners, researchers, and policymakers have recently placed greater emphasis on ongoing child assessments: frequent, repeated observations of children's performance and growth. Teachers use ongoing assessments to foster children's learning and development by examining children's performance, tracking their progress, and individualizing instruction to their unique strengths, needs, and interests. The use of ongoing child assessment for individualization is considered a best practice in early education programs[1] and is a requirement in the Head Start Program Standards.[2] Yet, despite this growing emphasis, we know little about how, or how well, ECE teachers implement ongoing assessment to adjust instruction or caregiving. We have limited evidence to support the link between use of ongoing assessment in early childhood and optimal child development. As a first and necessary step, the field needs stronger evidence identifying high-quality ongoing assessment practices and describing how to support their implementation. This can lay a foundation for future work that might explore the effects of these practices on child development.

To learn more about the use of ongoing assessment in early education, the Office of Planning, Research & Evaluation funded a project[3] in fall 2012 to explore how teachers use children's data to individualize instruction for each child. The project's goals were to (1) develop a conceptual framework of ECE teachers' use of ongoing child assessment to individualize instruction and (2) create a measurement tool to examine this process.[4] One component of the project is a review of the literature on ongoing assessment in early childhood. This review aims to provide insight on whether and how teachers use ongoing assessments to tailor their instruction. It also is intended to help develop criteria for determining the quality of teachers' ongoing assessment practices. This brief summarizes the findings from the literature review and offers important next steps.

Definitions of Key Terms

Ongoing child assessment: Repeated assessments and observations of a child's performance and progress over time.

Individualization: The process in which a teacher uses data to identify a child's skill level for a learning goal and tailor instruction for that child. The teacher uses data on an ongoing basis to see whether the child is progressing in response to the instructional changes and adjusts instruction as needed.

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Literature review methods

To identify literature for the review, the project team conducted a database search and solicited recommendations from experts. The following table shows the scope of the search. We identified more than 1,300 studies, of which 173 met our criteria for relevance. We screened out studies primarily for being off topic (for example, studies that did not focus on making individualized instructional decisions based on ongoing assessment data). We screened out others for being unrelated to our target populations, not a relevant document type (for example, newspaper articles), duplicate studies, or in a language other than English.

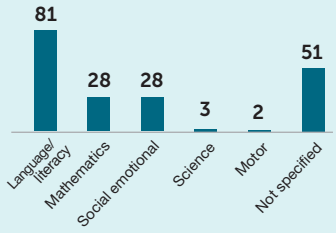
Literature review scope

Target fields of study	Early childhood[a] education Early childhood special education
Number of unduplicated studies	1,325
Number of studies relevant for review	173

[a] In this project, *early childhood* is defined as birth through 3rd grade.

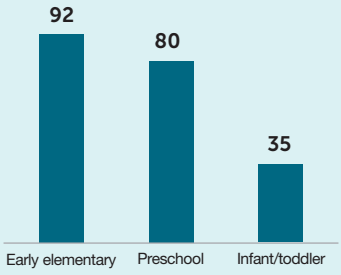
Literature review results

Developmental and Learning Domains Addressed
(number of studies)



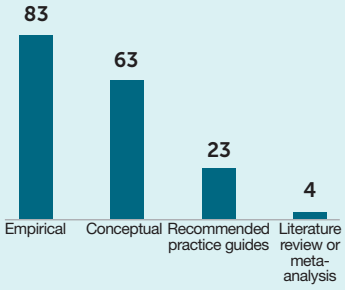
Note: Some studies did not address domain, and others addressed more than one domain.

Age Groups Addressed
(number of studies)



Note: Some studies addressed more than one age group.

Study Designs
(number of studies)



Key Findings

ECE teachers' use of ongoing assessment has not been extensively researched, and the research that does exist lacks scope and rigor.

- The existing research addresses ongoing assessment in only a few developmental domains and settings (see sidebar). The studies most commonly describe use of ongoing assessment in the language and literacy domain (81 of 173 studies). Far fewer studies address the domains of mathematics and social and emotional outcomes (28 studies each of 173). The research on infant and toddler and home-visiting settings is especially limited, with most of the research focusing on elementary and preschool settings.
- The rigor of the studies limits our ability to answer questions about the effect of ongoing assessment and tailoring on child outcomes or about the key steps in the process of ongoing assessment and tailoring that enhance its effectiveness. Nearly half of all studies use an empirical design (including descriptive outcomes, psychometric, and causal design studies), but only 16 percent of all studies use a causal design (including randomized controlled trials, single-case designs, and quasi-experimental designs). Most causal design studies do not examine the impact of teachers' use of ongoing assessment for individualization on instructional quality or child outcomes. For example, some of these studies assess the impact of providing teachers with supports such as coaching or technology-enhanced guidance around the use of ongoing assessment data. Other studies examine the effect of an instructional intervention on children's performance on an ongoing assessment measure. Empirical studies typically focus on the use of a single assessment tool (such as a specific curriculum-embedded assessment product); no studies address a wide range of tools.

Although more rigorous research is needed, a small body of evidence suggests a link between ongoing assessment and positive child outcomes.

- A few studies provide evidence of positive effects of ongoing assessment. Specifically, teachers who use ongoing assessment to individualize instruction may reduce the school readiness gap for children at risk, deliver more effective instruction, and have students who achieve better outcomes.[5]
- However, these studies typically include supports such as technology-enhanced systems that offer immediate, tailored feedback around using child data to tailor instruction. The technology component makes it infeasible to isolate the effects of ongoing assessment alone and impedes our ability to generalize to other settings where the teacher must make decisions about instruction without tailored feedback. The targeted recommendations in the technology-enhanced systems could be the key factor leading to better instructional decision making and child outcomes.

Professionally recommended practices show promise in defining the critical steps involved in using ongoing assessment to tailor instruction, but we lack rigorous evidence.

- Overall, limited evidence is available about the critical steps required to successfully implement ongoing child assessments to individualize instruction.
  - The literature suggests that teachers struggle to make the leap from collecting data to using it. However, we lack research that can help us identify where in the process this breakdown occurs. Using ongoing assessment individualization involves multiple steps: deciding what data to collect and how; conducting the assessment; documenting, organizing, and interpreting information; and making and implementing instructional decisions. Rather than examining all the steps in the process, most studies in the review focus on only a portion of the process of using ongoing assessment to tailor teaching. As a result, those studies cannot pinpoint where teachers are experiencing the greatest challenges.
  - Most studies examine teachers' use of this process with a particular child assessment tool. No studies examine implementation across a range of ongoing assessment tools, making it difficult to separate the quality of the tool from the importance of the specific process or step in assessing.
  - We lack rigorous evidence about the key steps in the assessment and tailoring process that make ongoing assessment most effective at improving instructional quality or child outcomes.
  - The literature does not provide guidance on how to support or measure successful implementation of key steps in the assessment and tailoring process. More research is needed on factors that affect teachers' ability to implement the process well.

- However, the existing literature does provide us with professionally recommended practices for implementing the steps in the process. It also suggests the range of ongoing assessment activities we are likely to see in ECE settings.[6]
  - While not based on empirical research evidence, these recommended practices draw on ECE professionals' and researchers' cumulative knowledge and observations of teaching practices and children's development.
  - For a model describing these professionally recommended practices and how practitioners can use them to guide their ongoing assessment efforts, see the issue brief, "What Does It Mean to Use Ongoing Assessment to Individualize Instruction in Early Childhood?"[7]

Families may be important partners in the collection and interpretation of ongoing assessment data, but evidence is lacking.

- We currently lack clear recommendations from recent empirical work about the role of families in ongoing assessment. But studies that examine family engagement more broadly describe families as important partners in the collection and interpretation of child data.[8]
- Teachers can use assessment data to provide families with regular feedback and help them better understand their children's progress.[9]
- Families can also help teachers conduct assessments, interpret data, select learning goals and strategies, and reinforce those strategies in the home.[10]

Teachers might need support to overcome barriers to using ongoing assessment for individualization.

- The literature suggests that although teachers might recognize the value of ongoing assessment, they do not consistently collect or use ongoing assessment data to tailor their instruction.[11]
- Several barriers could hinder teachers' ability to interpret and use data. These include a lack of knowledge of child development, curriculum content and teaching strategies, child assessment practices, and evidence-based instructional approaches.[12]
- In studies that ask about their experiences conducting ongoing assessments, teachers consistently cite the need for additional training and support.[13] However, few studies examine which supports improve teachers' ability to use ongoing assessment for individualization.[14] In general, comprehensive professional development related to the collection and use of ongoing assessment data seems to be more effective than no professional development, and professional development in this area appears to be more effective when it includes technology-driven support. Well-designed web-based or technology-enhanced systems can offer teachers feedback that is more immediate and tailored. This feedback, in turn, could lead to better instructional decisions and more positive outcomes for children.

Summary: Research is Needed to Address Knowledge Gaps

The existing literature draws on ECE professionals' and researchers' cumulative knowledge to provide us with professionally recommended practices for implementing the steps in the process. There is also a small body of evidence suggesting a link between ongoing assessment and positive child outcomes. These studies typically include supports such as technology-enhanced systems. Although existing research provides some information on teachers' use of ongoing assessment to individualize instruction, many unanswered questions remain. Specifically, we need further research to address the following gaps in our knowledge:

- **Little is known about teachers' implementation of the assessment and individualization process.** We need studies examining the process in its entirety to identify which steps teachers struggle to implement. We also need more research on how to support teachers in implementing high-quality practices with strong fidelity.
- **Evidence is needed to identify the key elements of the assessment and individualization process.** Studies that examine the entire process while simultaneously taking individual steps into consideration may help us identify the steps that are most critical for supporting optimal child development.
- **Few empirical studies exist on the links between ongoing assessment, individualized instruction, and child outcomes.** Additional rigorous evidence is necessary to empirically test whether teachers' use of ongoing assessment improves instruction and results in developmental gains for children. We particularly need studies examining the ongoing assessment process across varying assessments, developmental domains, and settings. We also need research isolating the effect of ongoing assessment from the effect of receiving tailored feedback from a coach or technology-enhanced support.

To help fill these gaps, we developed the Examining Data Informing Teaching (EDIT) measure, which is based on a research-informed conceptual framework and may be used to examine the different practices and proficiencies needed to effectively use assessment to inform instruction. The EDIT extends beyond existing tools because it captures a wider range of steps involved in early childhood assessment and individualization and can be used with different types of ongoing assessment systems. In future work, the EDIT could be used to explore the steps of high-quality ongoing assessment and tailoring and whether the process is linked to improved instructional practices and, ultimately, positive child outcomes.

Additional resources

Akers, L., P. Del Grosso, S. Atkins-Burnett, S. Monahan, K. Boller, J. Carta, and B.A. Wasik. "Research Brief—What Do We Know About How Early Childhood Teachers' Use Ongoing Assessment?" Washington, DC: Mathematica Policy Research, 2015.

Akers, L., S. Atkins-Burnett, S. Monahan, J. Carta, B.A. Wasik, and K. Boller. "Issue Brief - What Does It Mean to Use Ongoing Assessment to Individualize Instruction in Early Childhood?" Washington, DC: Mathematica Policy Research, 2015.

Akers, L., P. Del Grosso, S. Atkins-Burnett, K. Boller, J. Carta, and B.A. Wasik. "Tailored Teaching: Teachers' Use of Ongoing Child Assessment to Individualize Instruction (Volume II)." Washington, DC: U.S. Department of Health and Human Services, Administration for Children and Families, Office of Planning, Research & Evaluation, 2014.

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Endnotes

[1] National Association for the Education of Young Children. "NAEYC Early Childhood Program Standards." Washington, DC: NAEYC, 2005. Available at http://www.naeyc.org/files/naeyc/Position%20Statement%20EC%20Standards.pdf. Accessed October 29, 2013.

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[2] "Head Start Performance Standards." 45 CFS Sec 1307.3(b)(2)(ii). *Federal Register*, November 9, 2011.

[3] The full title of the project is "Assessing Early Childhood Teachers' Use of Child Progress Monitoring to Individualize Teaching Practices."

[4] The measurement tool is referred to as the Examining Data Informing Teaching (EDIT). This tool was formerly referred to as the Tool for Tailored Teaching.

[5] For example:

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[6] For example:

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[9] For example:

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[12] For example: Keilty et al. 2009; Orosco and Klingner 2010; Roehrig et al. 2008.

[13] For example: Roehrig et al. 2008.

[14] For example: Buzhardt et al. 2011; Landry et al. 2009, 2011.