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# RETHINKING CLASSROOM QUALITY

## What We Know and What We Are Learning

Public support for and government investments in early childhood education (ECE) are at an all-time high. Research has identified early childhood as a critical period for brain development,<sup>1</sup> work that has spurred interest in expanding ECE programs across the United States. But not all programs produce positive effects at the end of the preschool year. For those that do improve children's outcomes, impacts tend to diminish as children enter kindergarten and elementary school.<sup>2</sup> To maximize these significant investments in ECE, programming must be high quality, brought to scale, and generate substantial impacts on children's early learning that can be sustained through elementary school and into adulthood.

Experts in the ECE field agree that the quality of classroom learning experiences is critical to promoting children's development.<sup>3</sup> However, there is a lack of consensus both on the aspects of quality that matter most for advancing children's developmental gains and how to define and measure the quality of ECE programs.<sup>4</sup> Unfortunately, current conceptions and measurement approaches demonstrate small and inconsistent associations between quality and children's outcomes.<sup>5</sup> Identifying and measuring the dimensions of quality that are most strongly linked to children's outcomes can provide needed information on how to target interventions to ensure that children, particularly those from low-income minority families, receive and benefit from high-quality ECE programming at scale.

As the federal and state governments increasingly invest in ECE programs to improve their quality, MDRC is leading several studies that conceive and measure the quality of ECE classrooms in new and innovative ways. In particular, MDRC is focusing on *instructional quality* by examining promising instructional practices, such as the use of rich content and individualized activity settings and the promotion of higher-order skills within a broad range of learning domains. In doing so, MDRC aims to improve the understanding of the critical aspects of instructional quality that promote school readiness among low-income children and their sustained academic success as they move through elementary school and beyond.

### HOW CLASSROOM QUALITY IS CURRENTLY CONCEIVED

Although researchers agree that ECE quality is important,<sup>6</sup> they have not established what "high quality" means in a definitive and accurate way.<sup>7</sup> Current conceptions identify the following two broad dimensions of quality that are thought to influence children's learning and development:

- 1 STRUCTURAL QUALITY** refers to the *structural or physical* aspects of how ECE classrooms are designed and configured. This dimension includes aspects of the physical

classroom, such as the arrangement of furniture, the available materials and toys, and cleanliness and safety; structural features that may be determined by policy, such as teacher-child ratios, class size, age composition (for instance, mixed age or 4-year-olds only), and full-day or part-day hours; and teacher qualifications.

- 2 PROCESS QUALITY** refers to the *relational* aspects of classrooms and includes the social, emotional, and instructional interactions that occur among teachers and children.

## **HOW CLASSROOM QUALITY IN PRESCHOOL RELATES TO CHILDREN'S OUTCOMES**

Strong structural features are thought to provide a critical foundation that supports other components of quality.<sup>8</sup> Aspects of process quality are typically hypothesized to be more closely linked with children's gains than structural quality given their focus on interactions, which are more proximal to children's learning experiences than structural factors.<sup>9</sup> Yet, most studies have found small and inconsistent links between measures of process quality and children's outcomes in preschool.<sup>10</sup> Notably, instructional aspects of process quality — such as teacher practices that facilitate rich conversations and open-ended questioning — hold the most promise, demonstrating somewhat stronger links to positive child outcomes than other aspects of quality.<sup>11</sup>

Researchers find clearer associations between quality features and child outcomes when they are more closely aligned. For example, emotionally responsive teacher-child interactions have been shown to predict children's teacher-reported social skills, whereas instructional interactions such as promoting children's high-order thinking skills and providing a rich language environment have been linked with better academic and language skills.<sup>12</sup> This body of work suggests that it is important to distinguish specific aspects of quality when considering what matters most for each child outcome.

Taken together, the literature suggests that (1) structural quality may be necessary but is insufficient for promoting children's learning and development, and (2) a greater focus on the instructional aspects of quality is critical to moving the needle on child outcomes, especially because instructional quality in ECE classrooms tends to be low.<sup>13</sup> Even so, associations between higher instructional quality and gains in child outcomes are still modest. This raises a fundamental question: What is missing in existing definitions and measures of classroom quality, given that the ultimate goal is to produce sustained gains in children's learning and development?

## **HOW CLASSROOM QUALITY IN PRESCHOOL IS TYPICALLY MEASURED**

Measurement-related issues, however, overlay existing findings and limit what the field can currently learn. Current measures vary with respect to the aspects of quality on which they focus, the level of depth with which they assess quality dimensions, and the unit of observation (classroom versus

child). The most commonly used observational measures of ECE classroom quality are the Classroom Assessment Scoring System (CLASS) and the Early Childhood Environmental Rating Scale (ECERS).<sup>14</sup> These measures capture a mix of structural, process, and instructional quality. Other classroom observational measures focus on what is taught in terms of skill domains, such as math, literacy, and science, and the different activity settings where children spend time, such as whole group, small group, or centers.<sup>15</sup> Another set of measures captures the quality of instructional practices within specific skill domains.<sup>16</sup>

The most frequently used measures assess *global* quality — capturing what the average child experiences — but there are several measures that focus on the quality of an *individual* child’s learning experiences.<sup>17</sup> Classroom measures of global quality are more common because they are less time- and resource-intensive to code. Yet, child-specific measures of quality may be more predictive of child outcomes because they account for variation in individuals’ experiences within the classroom.<sup>18</sup>

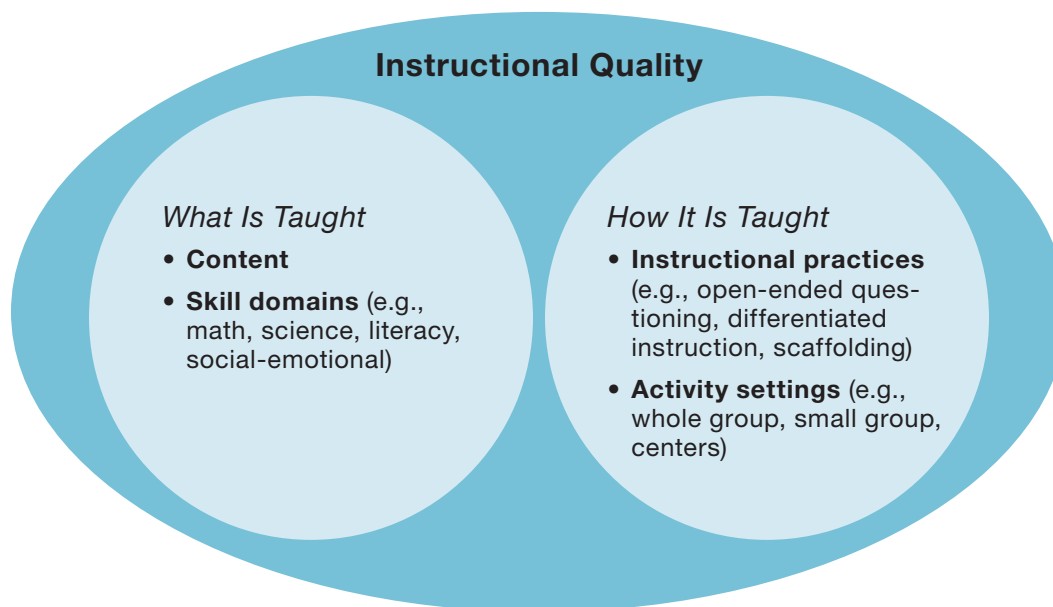
## A GREATER FOCUS ON INSTRUCTIONAL QUALITY

Given that instructional aspects of process quality are more predictive of child outcomes than relational aspects of process quality, the MDRC research team has been studying instructional quality and what it entails and refining how it is conceived. Many current conceptions of instructional quality focus on *how teachers teach* by capturing general instructional practices and the quality of instruction within a skill domain.<sup>19</sup> Largely absent from these conceptions, however, is an emphasis on *what teachers teach*. When it is studied, it is commonly examined as the time spent on teaching different skill domains (for example, math, literacy, and so on). Yet, what teachers teach is broader and includes the provision of content-rich instruction, which the research team defines as the delivery of background and world knowledge as the medium through which teachers support the development of children’s skills.<sup>20</sup> The literature suggests that what children are taught — including their exposure to rich content — is critical to the development of their higher-order skills, such as deep knowledge of vocabulary and problem solving, which are fundamental to children’s overall development and are positively related to longer-term outcomes.<sup>21</sup> Since these skills can be fostered by an intervention such as a prekindergarten (Pre-K) program and in fact are less likely to develop in the absence of such a program,<sup>22</sup> exposure to rich content may be a key element that current preschool programs must include in their curriculum to sustain impacts on outcomes over time. Because more disadvantaged children may have less exposure to content-rich learning opportunities, such practices may also reduce achievement gaps before, during, and beyond kindergarten.<sup>23</sup>

With these considerations in mind, the research team proposes to conceptualize instructional quality as encompassing both *what* teachers teach and *how* teachers teach. (See Figure 1.) The hypothesis is that the interaction between the what and the how of teaching — the content being taught along with high-quality instructional practices that promote children’s cognitive development — is what is most important for supporting short-term and lasting gains in children’s outcomes.

**FIGURE 1**

**A Refined Conceptualization of Instructional Quality**



In this conceptualization, the working definition of “content” is the rich background and world knowledge that teachers deliver through multiple, repeated knowledge-building learning activities that are connected to one another via a theme or multidisciplinary project. In essence, content is the medium through which instruction can support children’s skill development across multiple domains. Accordingly, content-rich instruction differs from instruction that teaches domain-specific skills in isolation. It also often falls outside present notions and measures of classroom quality, which tend to focus on how teachers teach but not what they teach. For example, in a Pre-K classroom where domain-specific skills are taught, a teacher might define vocabulary words about the ocean during a read-aloud but may not reinforce these concepts the rest of the week. In a classroom that takes a content-rich approach, by contrast, a teacher would intentionally build on the content discussed during the read-aloud through, for example, a hands-on, science-focused small group activity about the ocean as a habitat that also targets language, literacy, and math skills. The research team hypothesizes that the exposure to rich content as it takes place in the latter classroom — that is, as a medium through which domain-specific skills (such as vocabulary, print awareness, and counting) are developed — better supports children’s learning of world knowledge and higher-order problem-solving skills than the singular focus on domain-specific skills in the former classroom.<sup>24</sup>

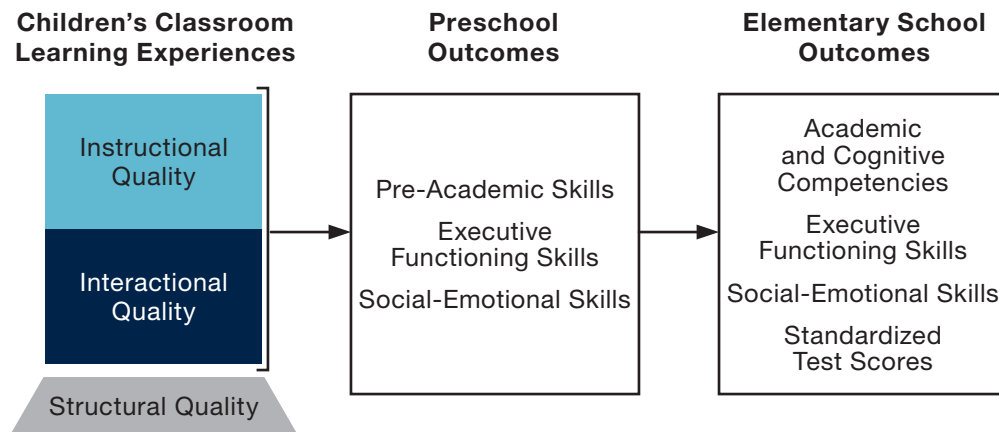
## RETHINKING A CONCEPTUAL MODEL OF CLASSROOM QUALITY

In line with this revised understanding of instructional quality, the research team puts forth a conceptual model of classroom quality that hypothesizes that there are three distinct but interrelated dimensions of quality. The team draws a distinction between the interactional and instructional aspects of process quality and proposes examining these aspects according to the following working definitions:

- **INTERACTIONAL QUALITY** refers to the quality of children’s interactions with teachers and other children in the classroom and the ways in which the classroom climate is positive, responsive, and predictable. It includes teachers’ warmth and sensitivity, as well as their overall classroom management and organizational skills.
- **INSTRUCTIONAL QUALITY** refers to *what* is being taught in the classroom and *how*. This dimension is described in more detail below.

Figure 2 illustrates how these three dimensions of classroom quality — structural, interactional, and instructional — make up children’s classroom learning experiences and their relation to outcomes in preschool and elementary school.

**FIGURE 2**  
**Conceptual Framework Linking Classroom Quality to Child Outcomes**



## WHAT IS MDRC LEARNING ABOUT THIS MODEL OF CLASSROOM QUALITY?

Given the small and inconsistent associations between extant measures of quality and child outcomes, there is a great need in the ECE field to create or adapt quality measures that capture a fuller range of activities, practices, and interactions in classrooms that are more strongly and directly

linked to children’s growth and development. The hope is that a more encompassing conception of quality and corresponding measures can help to identify which dimensions of quality may be most beneficial for promoting children’s learning and development.

Two current MDRC studies are gathering new sets of observational measures for ECE settings that detail the extent to which teachers promote the development of children’s vocabulary, use cognitively demanding teaching practices, and expose children to rich content to dive deeper into their classroom learning experiences. Both are a part of the MDRC-led Expanding Children’s Early Learning (ExCEL) Network and will provide evidence for this new conception of quality.<sup>25</sup>

The first study, ExCEL Quality, examines the effectiveness of two different curricular and professional development approaches to improving quality, one focusing on promoting structural and interactional quality and the other on promoting the conception of instructional quality described above. The latter approach aims to change *what* preschool teachers teach and *how* by (1) providing a content-rich curriculum in which learning activities follow a developmental sequence and (2) offering training and coaching that support teachers’ fidelity to the curriculum and their use of intentional instructional practices that promote children’s higher-order thinking, domain-specific skill development, and content knowledge. ExCEL Quality is poised to provide evidence for the malleability of these different dimensions of quality.

The second study, ExCEL P3, is a collaboration among MDRC, the Boston Public Schools Department of Early Childhood, the University of Michigan, and the Harvard Graduate School of Education. It evaluates a district-wide curriculum and professional development model that aims to align instruction from preschool to second grade in the Boston Public Schools. The project dives deeper into different aspects of instructional quality by collecting a new set of observational items that captures rich information on the extent to which teachers improve children’s vocabulary, use cognitively demanding teaching practices, and expose children to rich content. ExCEL P3 is set to elucidate which aspects of instructional quality persist through early grades when schools deliver content-rich and instructionally aligned curricular models.

## **IMPLICATIONS OF MDRC’S WORK**

Most of the current research on classroom quality is nonexperimental, which means it does not rigorously establish which specific quality dimensions — and associated teaching practices or instructional moves — consistently yield better child outcomes. These two studies will build on rigorous evidence about the effectiveness of interventions aimed at improving dimensions of quality, as well as shed light on the particular quality dimensions and teacher practices in ECE programming that should be targeted on a large scale to optimize child outcomes. To do so, the studies use a broader conception of classroom quality to assess instructional quality in a deeper and unparalleled way. Ultimately, this work can help identify ways to structure and package professional development for teachers that helps build an ECE workforce that can create high-quality learning environments and meet the needs of all children.<sup>26</sup>

## NOTES

- 1 Harvard Center on the Developing Child (2007).
- 2 For example, Barnett (1995); Ludwig and Phillips (2008); McCormick, Hsueh, Weiland, and Bangser (2017); Puma et al. (2012).
- 3 For example, Auger et al. (2014); Burchinal, Zaslow and Tarullo, (2016).
- 4 Burchinal (2018); Pianta, Downer, and Hamre (2016).
- 5 For example, Burchinal, Kainz, and Cai (2011); Weiland, Ulvestad, Sachs, and Yoshikawa (2013).
- 6 For example, Auger et al. (2014); Burchinal, Zaslow, and Tarullo (2016); Burchinal et al. (2008); Early et al. (2007); Zaslow et al. (2010).
- 7 Pianta, Downer, and Hamre (2016).
- 8 Connors (2016); Tseng and Seidman (2007).
- 9 Connors (2016); Tseng and Seidman (2007).
- 10 Burchinal (2018); Burchinal, Zaslow, and Tarullo (2016); Burchinal, Kainz and Cai (2011); Weiland, Ulvestad, Sachs, and Yoshikawa (2013).
- 11 Burchinal, Kainz, and Cai (2011); Burchinal, Vernon-Feagans, Vitiello, and Greenberg (2014); Burchinal et al. (2018); Howes et al. (2008); Mashburn et al. (2008).
- 12 Burchinal, Kainz, and Cai (2011); Burchinal, Vernon-Feagans, Vitiello, and Greenberg (2014); Burchinal, Zaslow, and Tarullo (2016); Howes et al. (2008); Mashburn et al. (2008).
- 13 For example, Burchinal, Vandergrift, Pianta, and Mashburn (2010); Denny, Hallam, and Homer (2012); Justice, Mashburn, Hamre, and Pianta (2008); Yoshikawa et al. (2013).
- 14 Pianta, La Paro, and Hamre (2008); Harms, Clifford, and Cryer (2005).
- 15 For example, Farran and Bilbrey (2004); Ritchie, Howes, Kraft-Sayre, and Weiser (2001).
- 16 For example, Goodson, Layzer, Smith, and Rimdzius (2006); Landry, Crawford, Gunnewig, and Swank (2001); Sarama and Clements (2009).
- 17 For example, Atkins-Burnett, Sprachman, and Caspe (2010); Downer et al. (2010); Ritchie, Howes, Kraft-Sayre, and Weiser (2001).
- 18 Connor et al. (2009).
- 19 For example, Pianta, La Paro, and Hamre (2008); Harms, Clifford, and Cryer (2005); Sarama and Clements (2007); Smith and Dickinson (2002).
- 20 Hirsch (2006); Neuman (2006); Neuman (2014).
- 21 Cervetti and Hiebert (2018); Dochy, Segers, and Buehl (1999); Kostons and van der Werf (2015); Recht and Leslie (1988).
- 22 Bailey, Duncan, Odgers, and Yu (2017).

- 23** Bassok and Galdo (2016); Snow and Matthews (2016).
- 24** Dochy, Segers, and Buehl (1999); Kostons and van der Werf (2015); McNamara and Kintsch (1996).
- 25** The ExCEL Network is a collaboration led by MDRC that engages local officials, preschool providers, and researchers as active partners in evidence building, while also benefiting from ongoing contributions from other experts in the field. It is a group of studies supported by Arnold Ventures and the Institute of Education Sciences, U.S. Department of Education, through Grant R305N160018 to MDRC.
- 26** Zaslow et al. (2010).

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