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Integrating Professional Development Content and Formative Assessment with the Coaching Process: The Texas School Ready Model

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- Q1:** NAEYC 1994 not in References.
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TABLE OF CONTENTS LISTING

The table of contents for the journal will list your paper exactly as it appears below:

Integrating Professional Development Content and Formative Assessment with the Coaching Process:
The Texas
School Ready Model

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15 *Instructional coaching is becoming common in
early childhood programs to provide individua-
lized, job-embedded professional development.
Yet relatively few studies have tried to “unpack”
the coaching process and delineate the specific
20 features of coaching that contribute to teacher
change. In this article, we describe an evidence-*

*based preschool-quality improvement program,
Texas School Ready (TSR), attending to the
integration of program content and coaching
25 process made possible through a defined
competency framework and technology-driven
tools that aid coaches in providing high-quality
mentoring.*

30

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Theoretical Underpinnings of Coaching

PROFESSIONAL DEVELOPMENT (PD), grounded in adult learning theory (Bransford, Brown, & Cocking, 2000; Putnam & Borko, 35 2000), is frequently conceptualized as a progression that varies depending on teachers’ knowledge and includes cycles of learning, implementation, feedback, and reflection (Snow,

40 Griffin, & Burns, 2005; Spodek, 1996). PD can be
 delivered in a variety of ways (e.g., training
 workshops) and should align with these key
 principles: (a) developing teachers' content
 45 knowledge with clear linkages between theory
 and practice; (b) using interactive, hands-on
 approaches to adult learning, including ongoing
 and personalized training and mentoring; and (c)
 providing opportunities for feedback and self-
 reflection (Desimone, 2009; NAEYC, 1994).
 50 These principles are difficult to apply in widely
 available PD offerings like workshops (Garet,
 Porter, Desimone, Birman, & Yoon, 2001);
 however, these principles are well aligned with
 sustained, individualized coaching approaches
 55 that, when combined with coursework, have been
 shown to improve teacher and child outcomes
 (Landry, Anthony, Swank, & Monseque-Bailey,
 2009; Neuman & Cunningham, 2009).

60 Three key dimensions that vary across
 coaching models include *structural* parameters
 defining the frequency, duration, and intervals of
 coaching sessions; *process* features that include
 the specific behaviors used by coaches to support
 change; and *content* that is the substantive, topic-
 65 driven focus of the intervention (Powell &
 Diamond, 2013). Model structure and content
 are usually specific to particular coaching
 approaches. Process features, typically under-
 specified, generally include these key strategies:

- 70
1. *Reflective questioning* is used to help
 teachers notice how children are respond-
 ing to instruction and interacting with
 others; it is often embedded into feedback
 75 sessions. Video supports reflection as it
 provides adults an opportunity to see, in the
 moment, what children are experiencing
 (Zucker, Crawford, & Landry, 2013).
 Individualized opportunities to reflect on
 what is happening in the classroom appear
 particularly important in high poverty
 classrooms where children's needs are
 greatest (Pianta, Mashburn, Downer,
 Hamre, & Justice, 2008).
 - 85 2. *Feedback* linked to data is a defining
 characteristic of multiple successful coach-
 ing models (Denton, Swanson, & Mathes,

2007; Pianta et al., 2008) and typically
 emphasizes using teacher and child-level
 data to identify strengths and weakness, 90
 target improvement, and measure success.
 Data collection and reporting is common-
 place in schools, but further steps to support
 interpretation and translation of findings
 into actions are needed (Coburn & Turner, 95
 2012; Goren, 2012). Coaches can play a
 vital role in establishing stable organiz-
 ational routines that include repeated cycles
 of data collection, collaborative analysis of
 results, and improvement planning (e.g., 100
 Sherer & Spillane, 2011).

3. *Demonstration* helps teachers bridge theory
 and practice by showing teachers "how"
 effective instruction looks in action
 (Poglinco & Bach, 2004). Demonstration 105
 is a high intensity coaching strategy (i.e.,
 coach directly interacts and does the so-
 called *heavy lifting*) that targets specific
 behaviors (Zucker et al., 2013). Evidence
 suggests this strategy is underutilized, with 110
 coaches spending too little time targeting
 instructional change (Sheridan, Edwards,
 Marvin, & Knoche, 2009) and preferring
 lower intensity strategies (e.g., observing,
 setting goals, providing feedback; Neuman 115
 & Wright, 2010). Demonstration system-
 atically varies based upon the coaching
 modality. In-class, face-to-face coaching
 allows coaches to begin with demonstration
 and move teachers through a gradual release 120
 progression (Pearson & Gallagher, 1983).
 Asynchronous, remote coaching typically
 relies on video libraries to demonstrate
 evidence-based practices and lessons rather
 than seeing how strategies work in one's 125
 own classroom.

Our Approach to Coaching Competencies

130 Since 2003, we have used coaching as part of a
 comprehensive, statewide PD program that has
 served more than 25,000 pre-K teachers across
 the state of Texas. In our experience, implement-
 ing a PD coaching model at scale, we find that

135 coaches are often unaware of the theoretical underpinnings and suggested mechanisms of change that link coaching with improvements in teaching behaviors. Instead, coaches often view their role as simply supporting teachers' efforts and showing teachers how they, themselves, would implement a lesson or interact with children—an orientation toward coaching that fails to address key mechanisms of change. To address this concern, we developed a generalized set of coaching competencies, shown in **Table 1**, that describe five dimensions of coach behavior that support implementation. Within our program, the competencies are used to train coaching staff, set clear expectations for coach engagement, and guide monitoring of fidelity. The competencies articulate coaching behaviors aligned with the theoretical underpinnings of our model. In this article, we explain how coaching competencies are contextualized within specific components of our intervention.

155 Coaches' Role in Each Program Component

The Texas School Ready (TSR) project includes five major components: in-service training and sustained teacher PD, provision of teaching resources, community-based technical assistance through stakeholder engagement, web-based child progress monitoring, and individualized data-driven coaching. As we describe in the following, coaches play a central role the program, delivering support for all five components experienced by participating teachers.

Teacher PD. Coaches facilitate: (a) face-to-face introduction to the foundational concepts of the TSR program and its tools; (b) *Progress Monitoring Training* that highlights the goals of tracking child progress, how to conduct the assessments on our web-based tool, and pulling reports on child progress throughout the year; and (c) *eCIRCLE PD*, which consists of more than 100 hr of online courses featuring extensive video-based demonstrations of effective instructional practices, as well as application-based assignments and activities. The courses

cover a broad range of topics aligned with early learning guidelines, and represent the content focus within our competency framework.

Resources and curricula. TSR provides coach support to encourage utilization of: (a) a high-quality commercial curriculum; (b) state learning guidelines; (c) a tiered supplemental language and literacy curriculum; (d) the CIRCLE Activity Collection, a print and online resource that includes more than 300 hands-on activities that teachers can implement in a variety of instructional settings; and (e) Classroom Startup and School Readiness Kits. Within our competency framework, these resources supplement our content focus and that ensure teachers have the materials needed to follow-through with actionable feedback provided by coaches.

Stakeholder engagement and sustainability planning. Coaches are typically employed by a community agency and play a vital part in building buy-in and encouraging sustainability. To do this, coaches provide routine communication and updates and host meetings that bring principals and directors together to discuss program aims and requirements and learn how to interpret child-progress monitoring results.

Child progress monitoring. Coaches support teachers with implementation of the CIRCLE Progress Monitoring System across the 3-year participation period. This tool (formerly known as C-PALLS+) is a user-friendly, technology-driven tool that is aligned with the Texas Prekindergarten Guidelines and Head Start Early Learning Framework. It includes direct assessments (e.g., picture naming) and observation-based measures (e.g., writing) that allow teachers to quickly assess a child's progress, access student level reports, view small group recommendations based on child benchmark status, and view instructional activities linked to learning domain and benchmarks that include scripted lessons accompanied by video-annotated demonstrations (**Figure 1**).

Coaches (a) integrate progress monitoring report analysis into routine instructional planning

Table 1
Coaching Competencies

	<i>Intensity of Coaching</i>	<i>Content Focus</i>	<i>Actionable Feedback</i>	<i>Supportive Presence</i>	<i>Reflective Guidance</i>
Competency	Adjust the level of support provided to match teacher needs in a given instructional situation.	Identify gaps in a teacher's content knowledge and provide accurate guidance regarding skill development and core concepts.	Combine content-related input with specific guidance regarding appropriate pedagogy and teaching behavior.	Transmit information and provide support in a non-threatening and collaborative manner.	Help teachers recognize connections between teacher behavior, child signals, and content aims across contexts.
Behaviors	<p>Corrects misunderstandings in content or pedagogy in the moment rather than waiting until the lesson is over</p> <p>Supports teacher to complete actions on his/her own rather than taking over instruction</p> <p>Interjects and offers clues/tips for modification</p> <p>Focuses on teacher behavior rather than issues unrelated to instruction</p> <p>Clearly articulates/thinks aloud about processes and actions</p> <p>Builds on what teacher is already doing and pushes for more sophisticated thoughts/actions</p>	<p>References key learning objectives</p> <p>Uses domain-specific language directly linked to observation tools and standards</p> <p>Rarely misses opportunities for content talk</p> <p>Content reference / guidance is age appropriate</p>	<p>References:</p> <ul style="list-style-type: none"> – specific teaching strategies – practices directly linked to observation tools – goal behaviors <p>Minimally narrates or summarizes events</p> <p>Suggests adaptations / modification / extensions to improve delivery of instruction / support</p>	<p>Uses positive language (verbal and non-verbal)</p> <p>Encourages collaboration</p> <p>Reinforces existing positive practices</p> <p>Moves on once teacher indicates/shows understanding</p> <p>Recognizes and responds sensitively if teacher shows discomfort / resistance</p>	<p>Uses reflective prompts/ language</p> <p>Orients teacher to child signals during instruction</p> <p>Connects specific teacher action(s) to child behaviors / response</p> <p>Connects reflection to standards, objectives, exemplars, assessment results</p>

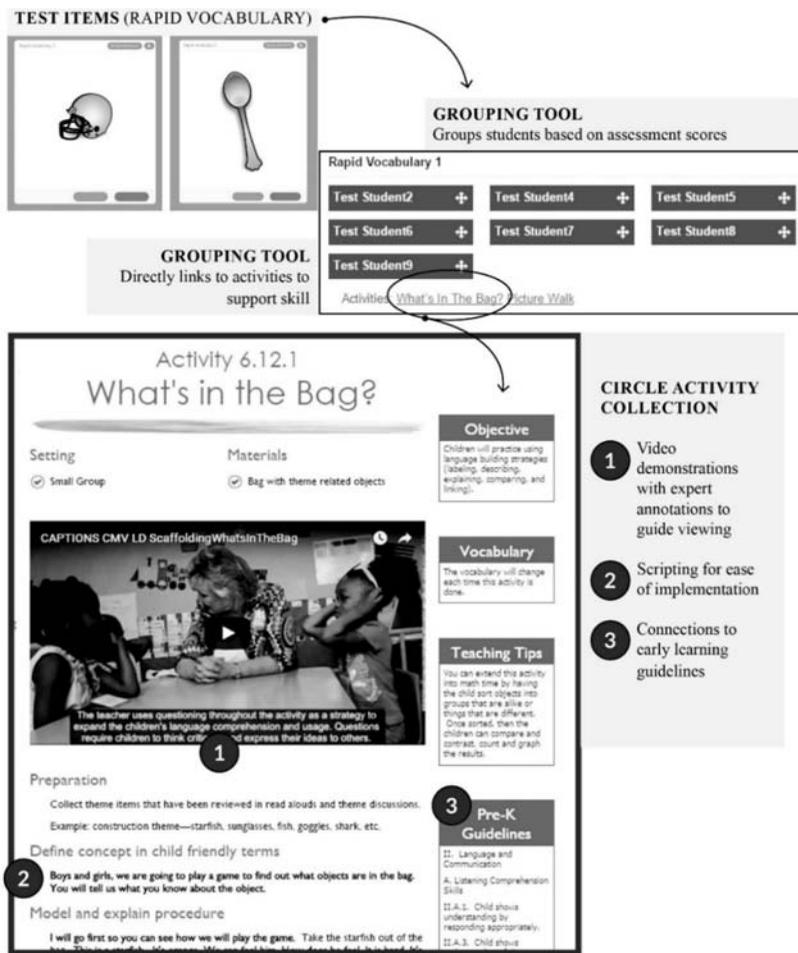


Figure 1. How Progress Monitoring Directly Informs Classroom Instruction.

225 sessions; (b) support teachers to establish small
 group instruction recommended by CIRCLE-PM;
 and (c) assign independent review of annotated
 video demonstrations and associated activity
 230 scripts in the online activity library; this
 technology-assisted extension of coaching helps
 teachers learn the basics on their own, allowing
 coaches to focus on more challenging aspects of
 lesson implementation such as scaffolding child
 responses. CIRCLE-PM is tightly aligned with
 our competency framework, automating connec-
 235 tions between content focus, reflective guidance,
 and actionable feedback.

Data-driven coaching. Teachers in our program
 receive individualized coaching that is delivered
 in the classroom or through remote feedback
 240 linked to recordings of a teacher’s own
 instruction. Coaching is structured to provide
 4 hr of individualized coaching per month during
 the first year of participation, 2 hr in the second
 year, and 1 hr in the third year. Three formative
 assessments, designed specifically to integrate the
 245 coaching process with a content focus, form the
 foundation of individualized coaching sessions:
 (a) CIRCLE Progress Monitoring System,
 discussed previously; (b) The Classroom

250 Environment Checklist (CEC); and (c) the
Classroom Observation Tool & Goal Setting
System (COT). Our data-driven coaching
approach encourages reflection and motivates
change through repeated cycles of: (a)
255 observation and data collection using CIRCLE,
CEC, and COT; (b) feedback and goal setting
based on identified need; and (c) implementing
teacher improvement plans alongside well-
matched coaching strategies (i.e., the *intensity*
260 component of our coaching competency
framework) and assessment-linked activities.

The CEC is a 21-item observation tool used by
coaches and teachers 3 times per year. Items are
rated on a 3-point scale and capture evidence that
265 classroom management systems are in place,
quantity and quality of content-related centers,
presence of instructional planning tools, and the
extent of meaningful literacy materials linked to
current topics and themes. Coaches complete the
270 CEC during their first classroom visit and
collaborate with teachers at the end of the
coaching session to set goals for change in
aspects of the classroom environment. Coaches
enter CEC data into our web-based platform, CLI
275 Engage, which produces a report that organizes
items based on lowest to highest score and
provides photographs of high-quality examples
linked to each item in the CEC.

The COT was designed specifically for
280 coaches to improve alignment with the content
foci of our teacher PD program and to encourage
more intentional coach-teacher goal setting
behavior (Crawford, Zucker, Williams, Landry,
& Bhavsar, 2013). The COT captures snapshots
285 of a teacher's behavior and instruction during a
2-hr classroom observation that can be used to
develop improvement plans and track a teacher's
progress over time (see Appendix A). The goal-
setting system is an extension of the COT that
290 leverages technology to routinize feedback and
goal setting, allowing for greater accuracy and
efficiency than generally achieved through more
manual methods. Teacher and coach collaborate
to set goals at the conclusion of each coaching
295 session by selecting indicators they want to
appear on the Short Term Goals Report. By
reviewing the individualized COT report,

they identify gaps in teaching skill and prioritize
goals based on: (a) student progress monitoring
reports; (b) current PD topics; or (c) an area of
300 instruction the teacher is highly motivated to
improve. To strengthen the fidelity of our goal
setting approach, an extensive set of high-quality
teaching examples has been aligned with each
item from the COT. These clips ensure that
305 teachers have an opportunity to see what good
performance looks like before attempting to
implement agreed upon changes.

The following is an example of how pairing
coaching competencies with the COT shapes
310 coach-teacher interactions in our program:
During a coaching session, a teacher is imple-
menting a lesson focused on sorting plastic letters
into two groups—letters in the child's name and
those not in the child's name—as compared to a
315 child's printed name card. Some children have
successfully completed the task and are waiting
while the teacher helps the remaining children
recognize the features that distinguish the letters
in their names. The coach provides *reflective*
320 *guidance* by asking the teacher what she notices
about the engagement level of the children who
have already finished the task. After the teacher
responds, the coach provides *actionable feedback*
325 by suggesting a modification to the activity for
children who have mastered the objective. Using
specific *content-focused* language from the COT,
the coach cues the teacher to *upward scaffold* by
removing the children's name cards and encourag-
330 ing them to sequence the letters in their own
names, and to *downward scaffold* by bringing the
name card back for comparison or support when
needed. These scaffolding goals are new for the
teacher, and the coach is prepared to model the
335 strategy if the teacher is missing an opportunity
or requires that level of coaching *intensity* to
work toward more effective practice.

As we worked to unpack the coaching process
within our own program and increase our
340 coaches' intentionality, we recognized the need
for an integrative approach that provides coaches
(a) clear articulation of underlying assumptions
driving change in teaching that are reflected in a
set of coaching competencies; (b) data-driven
345 tools to inform instruction and goal setting; and

(c) ongoing coach training and supervision to support continuous improvement. Integration among these ingredients is strengthened by leveraging technology to directly link formative assessments with feedback and recommendations for additional training and instructional activities, and to allow for cost-efficient supervision and training.

Synthesis of Evidence Supporting the Program

Since 1999, components of what is now called the Texas School Ready program have been evaluated and refined in three separate large-scale studies. An initial study, carried out across Head Start programs in multiple communities in Texas, demonstrated the importance of implementing eCIRCLE online PD courses in small-group formats, where teachers were actively engaged in learning, combined with in-classroom mentoring (Landry, Swank, Smith, Assel, & Gunnewig, 2006). Next, a four-state experimental study was conducted with a design that allowed us to determine the added benefit of combining our CIRCLE Child Progress Monitoring System with coaching and eCIRCLE PD (Landry et al., 2009). A third random assignment study, conducted across Head Start, public school, and child care, examined the effectiveness of the combined approach (i.e., eCIRCLE PD + coaching + CIRCLE PM) with 215 classrooms across 11 communities (Landry, Swank, Anthony & Assel, 2011). Each of these studies show that participants in the intervention conditions make greater gains in instructional practices and child outcomes, and that the combination of eCIRCLE PD, coaching, and CIRCLE PM resulted in the most optimal changes in teachers' instructional practices and children's school readiness outcomes.

Additional research on our coaching model is being fueled primarily by advances in technology-mediated approaches that have the potential to lower the costs of delivering services and increase access for geographically or linguistically hard-to-reach programs. We are currently conducting a randomized control trial in which teachers are assigned to one of three conditions:

(a) business-as-usual control group, (b) TSR with remote coaching, and (c) TSR with face-to-face coaching. Teachers in the remote coaching condition upload videos of instruction for coaches to provide careful reflection via annotated feedback (e.g., subtitled comments, praise, observations, and questions). Teachers review these annotated videos during a feedback phone call with their coach to set goals for improvement. In the face-to-face condition, teachers experience traditional, live classroom coaching including modeling, coteaching, and feedback sessions. This study will shed light on the importance of mechanisms of change within coaching as we examine whether strategies such as modeling within one's own classroom context are more effective than the online approximations of these strategies that use pre-recorded video exemplars as models. We conducted a preliminary analysis of global classroom quality from our first cohort of 55 teachers; we will include 210 teachers across all cohorts. Preliminary findings show significant changes for face-to-face teachers versus controls, with a large effect size (Cohen's $d = 0.92$, $p < .05$). Teachers receiving remote coaching also showed greater gains than control teachers ($d = 0.41$). Although teachers receiving face-to-face coaching made greater gains than remotely coached teachers, these differences were not significant ($d = 0.50$) and require further data collection to confirm the extent of differences across the coaching models. This study will conclude with a comparison of the cost-effectiveness of our remote and face-to-face coaching models to determine if potential trade-offs in effectiveness are outweighed by the cost and scalability of each approach.

Next Steps to Refine Coaching

Although instructional coaching is quickly gaining popularity, the availability of evidenced-based, coach-specific, training and support models is limited. Many questions remain regarding the specific coaching strategies that improve teaching practice, and the school- and program-based conditions that support or constrain the impact

of a particular approach. In particular, research is needed to further unpack the coaching process and to identify the key drivers of change that characterize effective coach-teacher partnerships. The emergence of coaching competency frameworks can facilitate this line of inquiry by clearly articulating the range of strategies that need testing. For example, by assigning teachers to coaching groups that vary in intensity (e.g., reflective feedback only, side-by-side coaching only) we can determine the importance of providing support in-the-moment versus outside of instructional time. By extension, does the level of directness or specificity in coach goal-setting practices with teachers' impact effectiveness? The answers to these questions may vary in important ways based on specific teacher characteristics, such as prior content knowledge or general receptivity to change.

Beyond the coach-teacher partnership, many more questions remain regarding the school- and policy-level factors that influence the fit and feasibility of a particular coaching model. For example, coaching approaches implemented by in-house staff members may differ in important ways from services delivered by external organizations. Specifically, in-house staff members may be expected to wear multiple hats, and are therefore less likely to hone their coaching skills; they may also be more likely to work across multiple grade levels that require a broad range of instructional knowledge, without which coaching content focus may suffer. We also need to examine the role that school leaders' play in establishing and maintaining conditions favorable to coaching, including setting the tone for continuous improvement and building buy-in for the coaching program among teaching staff. Perhaps most important are questions regarding the impact of explicitly linking coaching with performance appraisals, corrective actions, and financial incentives.

Identifying effective training and professional development for coaches is another important next step in refining instructional coaching. In our own work implementing at-scale, we are focused on building coaches' competencies by establishing a culture of continuous improvement that includes a

5-day in-person training at the beginning of each school year to learn about or reemphasize our coaching framework and provide practice opportunities. Coaches also participate in monthly web-based lunch-and-learns focused on evidenced-based practices linked to current teacher PD topics, and engage in monthly small-group collaborative coaching web-conferences in which selected coaches share a video of themselves engaged in coaching to receive feedback grounded in the coaching competencies from peers and program leadership. Additional study is needed to determine the effectiveness of such approaches at improving coaches' skills and ensuring adherence to research-based programs.

Q2

References

- Bransford, J., Brown, A., & Cocking, R. R. (2000). *How people learn: Brain, mind, experience, and school*. Washington, DC: National Academy Press.
- Coburn, C., & Turner, E. (2012). The practice of data use: An introduction. *American Journal of Education*, *118*, 90–111. doi:10.1086/663272.
- Crawford, A., Zucker, T. A., Williams, J. M., Landry, S. H., & Bhavsar, V. (2013). Initial validation of the pre-kindergarten classroom observation tool and goal setting system for data-based coaching. *School Psychology Quarterly*, *28*, 277–300. doi:10.1037/spq0000033.
- Denton, C. A., Swanson, E. A., & Mathes, P. G. (2007). Assessment-based instructional coaching provided to reading intervention teachers. *Reading and Writing*, *20*, 569–590. doi:10.1007/s11145-007-9055-0.
- Desimone, L. M. (2009). Improving impact studies of teachers' professional development: Toward better conceptualizations and measures. *Educational Researcher*, *38*, 181–199.
- Garet, M. S., Porter, A. C., Desimone, L., Birman, B. F., & Yoon, K. S. (2001). What makes professional development effective? Results from a national sample of teachers. *American Educational Research Journal*, *38*, 915–945.
- Goren, P. (2012). Data, data, and more data—What's an educator to do? *American Journal of Education*, *118*, 233–237. doi:10.1086/663273.
- Landry, S. H., Anthony, J. L., Swank, P. R., & Monseque-Bailey, P. (2009). Effectiveness of

- comprehensive professional development for teachers of at-risk preschoolers. *Journal of Educational Psychology*, *101*, 448–465.
- 535 Landry, S., Swank, P., Anthony, J., & Assel, M. (2011). An experimental study evaluating professional development activities within a state funded pre-kindergarten program. *Reading and Writing*, *24*, 971–1010. doi:10.1007/s11145-010-9243-1.
- 540 Landry, S. H., Swank, P. R., Smith, K. E., Assel, M. A., & Gunnewig, S. (2006). Enhancing early literacy skills for preschool children: Bringing a professional development model to scale. *Journal of Learning Disabilities*, *39*, 306–324.
- 545 National Association for the Education of Young Children and National Association for the Early Childhood Specialists in State Departments of Education. (2003). *Position statement: Early childhood curriculum, Assessment, and program evaluation*. Retrieved from <http://www.naeyc.org/position>.
- 550  Neuman, S. B., & Cunningham, L. (2009). The impact of professional development and coaching on early language and literacy instructional practices. *American Educational Research Journal*, *46*, 532–566.
- 555 Neuman, S. B., & Wright, T. S. (2010). Promoting language and literacy development for early childhood educators: a mixed-methods study of coursework and coaching. *Elementary School Journal*, *111*, 63–86.
- 560 Pearson, P. D., & Gallagher, G. (1983). The gradual release of responsibility model of instruction. *Contemporary Educational Psychology*, *8*, 112–123.
- 565 Pianta, R. C., Mashburn, A. J., Downer, J. T., Hamre, B. K., & Justice, L. (2008). Effects of web-mediated professional development resources on teacher–child interactions in pre-kindergarten classrooms. *Early Childhood Research Quarterly*, *23*, 431–451. 570
- Poglinco, S. M., & Bach, A. J. (2004). The heart of the matter: Coaching as a Vehicle for Professional Development. *Phi Delta Kappan*, *85*, 398–400.
- Powell, D. R., & Diamond, K. E. (2013). Studying the implementation of coaching-based professional development. In T. Halle, A. Metz, & I. Martinez-Beck (Eds.), *Applying implementation science in early childhood programs and systems* (pp. 97–117). Baltimore, MD: Brookes. 575
- Putnam, R. T., & Borko, H. (2000). What do new views of knowledge and thinking have to say about research on teacher learning? *Educational Researcher*, *29*, 4–15. 580
- Sherer, J., & Spillane, J. (2011). Constancy and change in work practice in schools: The role of organizational routines. *Teachers College Record*, *113*, 611–657. 585
- Sheridan, S. M., Edwards, C. P., Marvin, C. A., & Knoche, L. L. (2009). Professional development in early childhood programs: Process issues and research needs. *Early Education & Development*, *20*(3), 377–401. doi:10.1080/10409280802582795. 590
- Snow, C. E., Griffin, P., & Burns, M. S. (2005). *Knowledge to support the teaching of reading: Preparing teachers for a changing world*. San Francisco, CA: Jossey-Bass. 595
- Spodek, B. (1996). The professional development of early childhood teachers. *Early Child Development and Care*, *115*, 115–124.
- Zucker, T. A., Crawford, A., & Landry, S. H. (2013). Scaling up data-based mentoring in pre-kindergarten classrooms. In M. F. Shaughnessy (Ed.), *Mentoring practices, potential challenges and benefits* (pp. 195–218). Hauppauge, NY: Nova Science Publishers. 600 605