# A Framework for Scaffolding Language Development Through Meaningful Interactions

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*Alyssa is a 4-year-old in Mrs. Dawson's inclusive Head Start classroom. Although Alyssa has a language delay, she follows simple directions and produces unprompted one-word requests and comments, occasionally adding please and more. Working together, Alyssa's family and Mrs. Dawson decided that increasing Alyssa's unprompted and consistent use of new vocabulary and three-word phrases is a priority both at home and in the classroom. Mrs. Dawson is excited about the new science unit on gases, liquids, and solids because Alyssa's spontaneous use of language is improved with science experiments as she is naturally curious about her world and how things work.*

*As an experienced educator, Mrs. Dawson feels confident engaging her preschoolers in developmentally appropriate thematic science activities. She believes all children can learn, given their preferred and/or needed scaffolding support. In preparation for the new unit, Mrs. Dawson has transformed the classroom into a science lab. The dress-up center has several science lab coats, eye protection safety glasses, magnifying glasses, measuring cups, scales, and a microscope. Mrs. Dawson has also placed several observation forms and clipboards near the sensory table, and new science, technology, engineering, and mathematics (STEM) books in the library. Mrs. Dawson is aware that several of the children in her classroom, including Alyssa, will need specific support to actively engage with the challenging activities centered around the theme of solids, liquids, and gases. She considered the Universal Design for Learning to guide planning and included varied ways for children to gain access to and process new information and show their learning.*

*Mrs. Dawson considered her children's unique needs while designing modifications and adaptations to enhance all children's active participation. Knowing the value of providing meaningful interactions to support language development, Mrs. Dawson made sure to intentionally plan opportunities to interact with Alyssa throughout the day. She considered these reflective questions: What language skills do we need to support through each activity or routine? When do I intervene to provide scaffolded language support as Alyssa plays? How much support should I provide and what strategies*

DOI: 10.1177/10962506221149701
journals.sagepub.com/home/yec

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*can I use to expand Alyssa's language*?

## What Is Scaffolding?

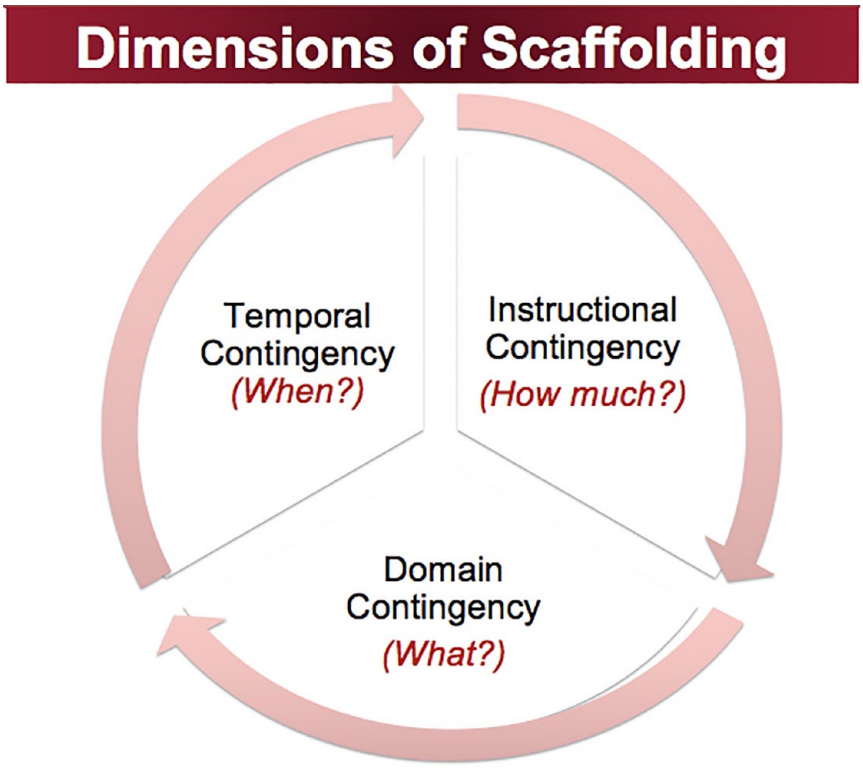
Scaffolding is the process through which a learner is provided with support to complete a task that surpasses their individual abilities (Van de Pol et al., 2010). Wood and colleagues (1976) first introduced the term “scaffolding” to describe a process they observed in parent–child interactions. These interactions involved one child and an adult who was aware of the child's ability level and adjusted their support to enable the child's independent task completion. The scaffolding metaphor is grounded in Vygotsky's (1978) well-known zone of proximal development (ZPD) concept, which emphasizes the role of adults, or more competent peers, in supporting a child to develop new capacities. The ZPD is a dynamic zone in which learning and development occur constantly, and scaffolding is a highly interactive process.

While children naturally engage in interactions that are supportive of their development, scaffolding is a powerful teaching practice for differentiating instruction to enhance learning (Pentimonti et al., 2017). The Council for Exceptional Children identified scaffolded supports as a high-leverage practice (McLeskey et al., 2017). In addition, the Division for Early Childhood of the Council for Exceptional Children (DEC) Recommended Practices related to responsive interactions are key to scaffolding supports as educators model, assist children in practice opportunities, and provide feedback across environments, routines, and activities (DEC RP INT 2 & INT 3, Division for Early Childhood, 2014). As they engage in scaffolding, educators select types of supports, calibrate them to students' performance, apply them flexibly, evaluate effectiveness, and gradually remove them when no longer needed. To effectively implement scaffolding, educators must understand the task, children's proficiency level, and be able to both plan ahead and implement supports “on the spot,” as students require them (McLeskey et al., 2017).

Keeping a child in their ZPD requires structuring the task and environment appropriately and constantly adjusting the amount of support, as well as responsiveness and warmth to maximize children's engagement (Berk & Winsler, 1995). As children are continuously growing, collecting progress-monitoring data can assist the educator in adjusting scaffolds and ensuring that children are within their current ZPD. This continuous assessment loop aids the educator in knowing when children might need more intensive support, provides information needed to modify instruction, and guides when new outcomes should be chosen (Grisham-Brown & Pretti-Frontczak, 2013). Being available, highly responsive, and showing enjoyment in interactions with children are effective scaffolding characteristics for inclusive early childhood classrooms (Soukakou, 2016).

The purpose of this article is to describe a framework to support early childhood educators' reflection and intentional planning of scaffolding to support children's development within inclusive classrooms. Although the framework can be applied to support any type of development, we focus on supporting

**Figure 1**
**Dimensions of Scaffolding**




language development through science activities. However, scaffolding in other activities and daily routines can use the same process.

Scaffolding requires educators to be intentional with their support. As the learner acquires the new skill, the educator fades the support. Although key scaffolding characteristics, including contingency (or responsiveness), fading, and transfer of responsibility, are commonly accepted, there is no clear consensus about how to operationalize scaffolding (van de Pol et al., 2010). An important direction, however, is provided through Wood's (2003) work, who continued the seminal research that introduced the concept (i.e., Wood et al., 1976).

Wood (2003) identifies three conditions for tutoring: (a) what support is needed (domain contingency), (b) how much support to provide (instructional contingency), and (c) when to support the child (temporal contingency). Taken together, these three dimensions lead to scaffolding a student's performance and can guide educators in making scaffolding decisions (Rodgers et al., 2016). We extend Wood's (2003) tutoring conditions to depict a three-dimensional scaffolding process (Figure 1). According to Wood (2003), an educator's task is often challenging as it involves making constant decisions about what to focus on to support learning, how much help to provide, and when to help (Rodgers et al., 2016). To intentionally plan for scaffolding, educators must observe, interpret, and respond to the child's

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exploration, play, and social activity by joining in and expanding on the child’s focus, action, and intent (DEC RP INT 4, Division for Early Childhood, 2014). Educators can proactively plan for intentional scaffolding support, allowing them to lead the efforts in the beginning and then fade supports as the child becomes more successful with the targeted skill. In the following, we will describe each scaffolding dimension and exemplify how educators can plan and implement effective scaffolding.

### *What?—The domain dimension*

The educator’s responsiveness and reciprocal interactions with children are critical to providing a rich environment to support language learning (Girolametto et al., 2003). We know that educators’ ability to facilitate communication has been strongly associated with vocabulary development (Justice et al., 2018). Encouraging children to engage in conversations improves early vocabulary (Zimmerman et al., 2009) and provides opportunities for adults to scaffold their language support. In addition, science and mathematics interactions support language development by exposing children to new vocabulary words in meaningful contexts (National Institute for Early Education Research [NIEER], 2009).

Young children enter preschool classrooms with diverse accomplishments in their language skills and educators have the important role of providing instruction to facilitate language development. In particular, children with language delays or disabilities need educators to use appropriate scaffolding strategies. As recommended by DEC, educators should provide interactions that promote communication by observing, interpreting, responding contingently, and providing natural consequences for verbal and nonverbal communication (DEC RP INT 3, Division for Early Childhood, 2014). The domain dimension involves the educator in the process of deciding what skills need to be supported in each activity, which requires strong knowledge of child development theory (Wood et al., 1976) while also considering individual variability. In addition, the educator needs to engage the family in identifying skills to target for instruction that promotes learning in natural and inclusive environments (DEC RP INS 2, Division for Early Childhood, 2014). Using this knowledge, the educator is able to identify meaningful skills and supports that optimize children’s success.

Specifically in the area of language, educators and family members might consider the levels of abstraction in children’s language development, including both literal and inferential language skills (Blank et al., 1978). Literal language is used when children label, describe, or respond to information that can be readily perceived. To develop literal language, an educator may ask a child to label an object (e.g., What is this?) or have the child describe an object (e.g., What color is the liquid?). Inferential language requires children to move from using language to label, describe, or respond to information that can be directly observed to using language to infer and reason about what they perceive (Blank et al., 1978). As such, inferential language requires a higher

level of cognitive demand compared with literal language. Questions that ask children to share their opinions, explain why, and evaluate a situation engage them in using inferential language skills (e.g., What do you think will happen to the ice cube during snack? Why?). It is important to provide young children with delays and/or disabilities with opportunities to develop both types of language skills. Previously, Kaderavek and her colleagues (2019) described the levels of language and presented an application focused on preschool children.

These important language aspects require the educator to intentionally plan and implement responsive conversations where children can demonstrate their use of literal and inferential language skills through both receptive and expressive language (Kaderavek et al., 2019). Young children with limited expressive language skills may initially need more support to answer inferential questions (Kaderavek et al., 2019). Educators may use high-support scaffolding strategies, such as co-participation or reducing choices (discussed in the instructional dimension), to support inferential language skills (e.g., Which liquid is heavier, syrup or water?).

*As Mrs. Dawson was planning to support Alyssa, she observed and took data on her mean length of utterance (MLU) and gathered information from Alyssa's father about her use of language outside of school. In free playtime and circle time, Alyssa consistently uses one-word requests. However, during snack and science activities that are interesting to Alyssa, she will sometimes use two-word requests or comments. This supported what Mrs. Dawson had just read about the language benefits of integrating science in the early childhood curriculum because children are naturally curious about the world around them. Mrs. Dawson thoughtfully planned to use imitation prompts to promote Alyssa's more consistent two-word phrase use. Mrs. Dawson has also planned to have Alyssa continue adding the words "please" and "more" to words she was commonly using during snack and science activities. In addition, Mrs. Dawson planned to support Alyssa's literal and inferential language in her interactions with peers by preparing visual support cards to reduce choices based on common child answers. The planned prompting of Zachary and Darius were invisible supports for Alyssa as Mrs. Dawson knew that Alyssa would hear their responses and be more likely to repeat similar phrases.*

*Later in the week, Mrs. Dawson took MLU data during a combined science and snack activity where she provided scaffolded language supports.* Table 1 presents the MLU progress monitoring information that Mrs. Dawson gathered. *This day, Mrs. Dawson served grape juice with ice cubes. She explained that the ice was solid but that it can change when it warms up. She put one ice cube on a plate at each table and told the students to watch the ice change during snack time. Mrs. Dawson asked students what they thought would happen.*

Mrs. D.: *Zachary what do you think will happen to the ice? (Inferential language [IL])*
Zachary: *It will change colors.*
Darius: *Change to liquid.*
Mrs. D.: *Good guesses. Let's watch and see if the ice cube changes colors or turns to liquid. The juice in your cup is liquid and the crackers are a solid. Alyssa, look!* [points at the ice on the plate]. *Darius, what is happening to the ice?* (*Literal language [LL]*)
Darius: *It's getting small, almost gone.*
Alyssa: *Ice getting small.*
Mrs. D.: *Yes, the ice cube is smaller and there is more liquid in the plate.* [Alyssa sitting next to Darius] *Turn to your friend and talk to them about what has happened to the ice and use the cards I gave you.* [Shows two picture prompts: Picture 1 = an ice cube that is pink; Picture 2 = a puddle of liquid] *Darius, talk with Alyssa about what happened to the ice on your table.*
Darius: [Turns to Alyssa and shows her the picture prompts] *Alyssa, the ice is tiny. It has melted. There is more liquid now.* [Points to the plate] *Touch it Alyssa! (LL)*
Alyssa: [Giggles] *Says, "Cold."*
Darius: [Asked Alyssa] *"Did it change color or turn to liquid?"* [uses picture prompts] (*LL*)
Alyssa: [Points to the card with a liquid puddle and says] *"Changed likid."*
Mrs. D.: *It turned to liquid.* [Alyssa was touching the water] *How does the liquid feel?*
Alyssa: *"Cold."*
Mrs. D.: *Yes, the liquid is cold. Would everyone like more ice (solid) or more juice (liquid)?*
Alyssa: *Gape juice* [holds up cup]
Mrs. D.: *"Grape juice please."* [expectant look]
Alyssa: *"Gape juice pease."*
Zachary: *"I like juice, too."* [holds cup up for juice]
Mrs. D.: *Is juice a solid or a liquid?*
Darius: *"Grape juice is liquid." (LL)*
Mrs. D.: *Yes, our grape juice is a cold liquid. Alyssa, say with me, "grape juice is a liquid."*

**Table 1**
**Mrs. Dawson's Progress Monitoring for Alyssa**

| Date: March 11, 2022 | | Child's name: Alyssa Z. | | |
|---|---|---|---|---|
| **Setting: Snack** | **Length of utterance** | **Prompted (P)/ unprompted (U)** | **Utterances** | **Levels of language** |
| | 3 | P | Ice getting small | Literal (description of characteristics) |
| | 1 | U | Cold | Literal (description of characteristics) |
| | 2 | P | Changed likid | Literal (description of characteristics) |
| | 1 | P | Cold | Literal (description of characteristics) |
| | 2 | U | Gape juice | Literal (label/imitation) |
| | 3 | P | Gape juice pease | Literal (label/imitation) |
| | 3 | P | Gape juice likid | Literal (description of characteristics) |
| Mean length of utterance | 2.4 | P | | |
| | 1.5 | U | | |

### *Alyssa: "Gape Juice Likid" (LL)*

Mrs. Dawson knew from previous progress monitoring that Alyssa's use of expressive language was at the literal level. However, Alyssa had demonstrated the ability to answer more abstract, inferential questions receptively, by pointing to pictures. Therefore, Mrs. Dawson planned this interaction for the snack routine where she could reinforce the science concepts that the class had been working on. She planned to prompt literal language skills using reduced choices, co-participation, and elicitation. Targeting literal language skills using these scaffolding strategies increased Alyssa's MLU averages, both prompted and unprompted. For more examples of how Mrs. Dawson might work on language and science across daily routines, see pages 141 to 149 in the book, *Six Steps to Inclusive Preschool Curriculum* (Horn et al., 2016).

### *How?—The instructional dimension*

The instructional dimension is focused on the support levels that the educator may need to provide for a child to successfully engage with a task (Wood et al., 1976). Deciding on how much support to provide requires the educator to be knowledgeable about the curriculum, the child's development relevant to their culture and background, and the student's individual learning goals based on family input. In addition, educators need to have a repertoire of scaffolding strategies that support participation regardless of a child's level of ability. This knowledge allows the educator to constantly adjust the scaffolding level, or the support required, to facilitate engagement. This type of contingency is complex because making decisions during lessons about the amount of help to offer children may be challenging. On the contrary, trying to entirely plan an interaction is neither feasible nor recommended. Considering the dynamic nature of conversations, educators can prepare to scaffold children's engagement by extending their own understanding of scaffolding strategies they can use.

Research describes a continuum of scaffolding strategies, from high to low support, which educators can use according to a child's required

**Table 2**
**Scaffolding Strategies and Examples**

| Scaffolding strategies | Levels of language | | |
|---|---|---|---|
| | Literal ⟷ | | Inferential |
| High support ↕ Low support. . . | | | |
| Model/elicit (provide a model of a correct response) | "The juice is liquid, and the ice cube is a solid. Say 'The juice is a liquid.'" | | |
| Co-participation (prompt children to complete task with a peer or teacher) | "Let's say together if the juice is a liquid or solid. 'Liquid!'" | | |
| Reduce verbal demand (simplify task by asking children to fill in the word) | "The ice has turned to \l\. . ." (liquid) | | |
| Reduce choices (ask closed questions that reduce the number of answers) | "Has the ice changed colors or turned to liquid?"[observe ice] | | "Do you think the ice will change color or turn to liquid?" |
| Expansion | "Yes, the syrup is heavy and it is also thick." | | |
| Ask open-ended questions (prompt children to explain their thinking, generalize, or make predictions) | | "What happened to your snowman when the sun came out?" "What else can melt?" | "What do you think will happen to the ice?" |

*Source*. Adapted from O'Connor et al. (2005).
*Note*. Keeping the Universal Design for Learning (UDL) framework as the foundation of planning, early educators will also need to include visual supports, wait time, and prompting to meet the varied learning preferences and needs of all children.

level of support (e.g., O'Connor et al., 2005; Pentimonti et al., 2017; Zucker et al., 2020). High-support strategies provide a high guidance level to help children complete a task, which limits the cognitive demand and improves the likelihood of successful task completion (e.g., modeling, reducing choices, and reducing verbal demand; Zucker et al., 2020). As children's skills increase, educators should move toward using more low-support strategies to provide less direction in completing tasks. Such strategies assist children to use inferential language to make predictions (e.g., Why do you think the ice melted?) or generalizations (e.g., What else could melt? Kaderavek et al., 2019). When considering how much support to provide, the educator may need to remember to make sure that sustained interactions occur during the learning session. Sustained interactions are defined as two reciprocal interactions (Soukakou, 2016) or a minimum of five interactions with the child (i.e., "strive for five"; Zucker et al., 2020, p. 2). Educators may evaluate children's responses to prompts and continuously scaffold up and down by adjusting the level of support within the same interaction to ensure exchanges are sustained.

Research indicates that educators are inclined to use more low-support strategies in their classrooms (Pentimonti et al., 2017). Considering that high-support strategies are particularly important to use with children who have low language skills, educators should consider using the full repertoire of strategies to actively engage children.

> “This responsiveness is critical because waiting too long to provide support may cause frustration, whereas helping too soon will reduce the child’s independence.”

Table 2 provides an overview of common scaffolding strategies that educators can use in their interactions with children.

*As Mrs. Dawson was reviewing progress-monitoring data, she remembered that Alyssa knew the concept of more or less but had not applied that to weight. Therefore, in future interactions, Mrs. Dawson scaffolded prompts up and down to increase Alyssa’s MLU as she worked to also improve her ability to provide expressive responses to more abstract inferential prompts. This required Mrs. Dawson to pivot back and forth with literal and inferential prompts that were also scaffolded according to Alyssa’s prior responses and knowledge about more and less. In addition, she planned for visual prompts, real object containers, and scaffolding support strategies. Mrs. Dawson anticipated that Alyssa would need a high support level to engage with the concept of weight, so she planned to use questions that would reduce choices (e.g., “Which is heavier—syrup or water?),” use co-participation to verbally engage Alyssa (e.g., “Yes, syrup is heavy. Say with me, “Water is less heavy”), and provide modeling “Syrup is a thick liquid.”*

### *When?—The temporal dimension*

The temporal dimension requires the educator to use data gathered through various methods, particularly through observation, to make decisions about the timing of supports provided. The educator needs to “observe, interpret, and respond intentionally” (DEC INT 4, Division for Early Childhood, 2014), which requires continuous assessment (e.g., pre-assessment, progress monitoring), planning for interaction (e.g., planning the task, structuring the environment), and responding according to the child’s needs. This responsiveness is critical because waiting too long to provide support may cause frustration, whereas helping too soon will reduce the child’s independence and ability to problem solve (Rodgers et al., 2016). Progress monitoring that is sensitive to small changes in development can help educators decide when to provide support. Determining when more intensive supports are required by children is a skill that the educator has to make many times daily. Making these decisions about when to appropriately provide just-in-time support is contingent on the educator’s ability to engage in *observing*, *planning*, and *responding* as a cyclical process.

*As Mrs. Dawson was planning support for Alyssa, she observed and took data on the approximate time Alyssa needed for processing a question. When Mrs. Dawson provided the proper wait time, Alyssa’s unprompted MLU grew from 1.5 words* (Table 1) *to three words* (Table 3). *Mrs. Dawson planned for environmental supports, such as smaller pouring containers, scales, favorite flavor liquids (grape), and picture for visual support. These supports reduced Alyssa’s required processing time. Mrs. Dawson also reflected on when she might use low- and high-support scaffolding strategies to facilitate expressive language at specific time points in the lesson. A paraprofessional recorded the following conversation when Mrs. Dawson joined Alyssa at the dress-up science lab center to talk about the liquids that had been placed in the center.*

**Table 3**
**Mrs. Dawson's Progress Monitoring for Alyssa**

| Date: April 20, 2022 | | Child's name: Alyssa Z. | | |
|---|---|---|---|---|
| **Setting: Free play dramatic center (i.e., science lab)** | **Length of utterance** | **Prompted (P)/unprompted (U)** | **Utterances** | **Levels of language** |
| | 3 | P (pointed glasses) | Cool pink gases | Literal |
| | 2 | P (left and right hand choices) | Water first | Literal |
| | 2 | P | Same heaby | Inferential |
| | 3 | U | Kool-aid purple gape | Inferential |
| | 3 | P (reduced choices) | Glue more heaby | Inferential |
| | 3 | P | Glue pours slow | Inferential |
| | 3 | U | Geen block heaby | Inferential |
| Mean length of utterance | 2.6 | P | | |
| | 3 | U | | |

> "Comparing scaffolding with a "dance" between the adult and the young child is well suited to describe the intricacies of this process."

Mrs. D.: *Look at you scientist Alyssa. Tell me about your safety glasses*? (*LL*)
Alyssa: [Smiles] "*cool pink gasses*."
Mrs. D.: *With those special glasses, let's measure and view the liquids. Do you want kool-aid (left hand) or water (right hand)*? [Waits 5 s and prompts again]. *Kool-aid or water first*?
Alyssa: [Points to Mrs. D.'s right hand] "*Water first*."
Mrs. D.: *Pour them slowly and put them on the scale. Are they different or the same weight? (IL)*
Alyssa: *Same heaby.*
Mrs. D.: *Yes, kool-aid and water are the same weight. I wonder how they are different. (IL)*
Alyssa: *Kool-aid purple gape*.
Mrs. D.: *That's right, kool-aid is purple. Let's try pouring glue and kool-aid. Which do you think will be more heavy*? [Prompts Alyssa to pick up the glue and then kool-aid] *(IL)*
Alyssa: *Glue more heaby.*
Mrs. D.: *Alyssa, touch the glue and the kool-aid. Why do you think glue is more heavy*?
Alyssa: *Glue pours slow* [points to visual thick vocabulary card taped to table] *(IL)* [Now Alyssa moves to the block center where Mrs. Dawson had placed a similar scale.]
Alyssa: [Puts blocks on the scale and points to the scale that is down] *Geen block heaby.*
Mrs. D.: *Yes, the green block weighs more than the red block. What shape is the green block*?

## In Summary

Educators such as Mrs. Dawson make continuous decisions on the best way to support the learning and development of children in their classroom. Scaffolding is a powerful teaching practice, which requires both planning ahead and implementing supports within the moment, as educators demonstrate responsiveness and engage students in sustained interactions. We find that comparing scaffolding with a "dance" between the adult and young child (Berk & Winsler, 1995, p. 29) is well suited to describe the intricacies of this process. Responsive interactions require educators to use multiple practices,

including observing, interpreting, responding contingently, and encouraging children to initiate and sustain interactions with others through modeling, practice, and feedback (DEC INT 2 & INT 3, Division for Early Childhood, 2014). A framework that considers scaffolding dimensions can assist educators to comprehensively plan for and implement sensitive and responsive interactional practices in their classroom. Using such practices across environments and routines will provide genuine opportunities to promote specific child outcomes, while considering the children's various developmental levels and cultural and linguistic background, in alignment with DEC Recommended Practices (2014).

We present the framework in a structured manner to serve as a model for both novice practitioners and those interested in learning more about scaffolding. However, we trust that as the scaffolding dimensions are understood more fluently, practitioners will engage in the "dance," using responsive interactions infused in multiple content domains and various contexts. Planning for these scaffolding dimensions can help practitioners be more intentional with the time they have with each child and make interactions more meaningful.


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