I DID IT ALL BY MYSELF
SCAFFOLDING TO DEVELOP PROBLEM-SOLVING AND SELF-HELP SKILLS IN YOUNG CHILDREN

by Tammy Lee

"Do you see a piece that might fit here?" the teacher asks the 2-year-old, pointing to an empty space.

The child looks at the pieces but doesn't find the right one.

"Look over here," the teacher says, indicating three pieces. "Can you find it now?"

The child chooses and correctly places the piece. She smiles with pride, "Look, I did it!"

Young children need assistance as they attempt new tasks and seek to master familiar ones. Teachers aid children in their efforts by scaffolding experiences, using a collection of strategies named for their resemblance to the temporary construction site structures (Wood, Bruner, and Ross 1976). By employing scaffolding techniques, educators help children achieve heights they otherwise could not reach, assisting in the construction of their understanding and the development of their abilities.

Adult scaffolding techniques have been shown to improve a child's ability to complete a task (Morrissey and Brown 2009). The goal is to provide temporary support that will later be removed as the child acquires, and eventually masters, new skills.

This article will explore the concept of *scaffolding*, examining several scaffolding strategies commonly used with young children, and how early childhood professionals can use these techniques to help children develop problem-solving and self-help skills.

Scaffolding a child's learning experiences

In his theory of child development, Lev Vygotsky proposed that learners have a zone of proximal development, a region where they acquire new skills more readily with the assistance of someone more knowledgeable than themselves (Berk 2001; Vygotsky 1962). Scaffolding techniques are the means by which the more knowledgeable other, a teacher, guides the learner within the learner's own zone to reach a greater understanding and mastery of the task.

The skills are ones that adults and even peer tutors use constantly—and somewhat unconsciously—in the natural course of instruction. In certain ways, their implementation seems to be instinctive: Everyone from grandma to the babysitter uses scaffolding strategies to some degree when assisting young children.

Yet scaffolding strategies in the early childhood classroom must be intentional and well executed. To use such techniques effectively, teachers need to be aware of a child's changing developmental status, knowing when and how to provide new tasks and structure, and helping the child learn new skills and abilities while still allowing a degree of autonomy (Berk and Winsler 1995; Kearn 2000).

Relevant research on scaffolding strategies includes several means that researchers and educators use to conceptualize the approaches (Anghileri 2006; Bodrova and Leong 2001; Lewis 2010). There are many ways to help children master their world, and the techniques often depend on the situation, subject

matter, and the ability level of the child in relation to the activity (Kearn 2000). Any one scaffolding strategy can be used to teach a number of skills pertaining to many different subjects and situations.

Developing problem-solving skills

As early childhood professionals, we spend our days teaching everything from hand washing to beginning math. Our goal is to help all children learn valuable life skills, such as dressing themselves and interacting with others, as well as skills necessary for success in elementary school, like reading comprehension and counting.

To prepare young children for later academic success, we focus on developing problem-solving skills, both in general and related to specific subjects, such as math. Three specific scaffolding strategies—organizing the environment, using appropriate cues to guide behaviors, and modeling—named by Lewis (2010) and Anghileri (2006) can help foster problem-solving skills.

Organize the environment. How we prepare our classroom helps promote student success by supporting their independent functioning. It encourages children to interact with their surroundings and the materials, allowing them to meet their own needs, solve their own problems, and make their own choices.

Having the environment ready for the children also decreases frustration levels as they work at their own pace, completing tasks independently. It is the teacher's job to limit and structure activities even before the children's arrival (Rogoff 1986).

Look around your classroom and ask yourself questions like these:

- Are scissors and paper available for artwork and cutting practice?
- Is the water table filled and sufficiently stocked with items for exploration?
- Have I provided the exact number of manipulatives needed to complete a self-correcting math activity?
- Are there enough books, puzzles, art materials, and other items to spark each child's interest and encourage self-directed learning?
- And the most important question: What am I doing in the classroom FOR the children that they can do on their own?

If the ultimate goal of scaffolding learning experiences is to allow children to achieve mastery, then we should be allowing young children to attempt and demonstrate such mastery as they interact within the prepared classroom environment.

Use appropriate verbal and visual cues. This scaffolding strategy may come in many forms, but the purpose is the same: Helping children come up with a correct answer or reach a specific conclusion. With this approach, the teacher is searching for the spark of recognition that will ignite and expand a child's understanding.

> The teacher greets a child who was absent the day before. "We missed you yesterday," she says. "Where did you go?"
> The child looks at her, but doesn't seem to understand.
> "What did you do yesterday when you weren't at school?"
> Again, there is no response.
> "Did you go to see someone?"
> "Yes," he says.
> "Who did you go to see?"
> "The doctor," he replies. "I got a sticker."
> "Oh," says the teacher. "I see. You went to the doctor yesterday."

Here, the teacher is using verbal cues to help a child understand the concept of *yesterday*. She relates it to what he was doing when he was not in school the day before. In this situation, the teacher supplies most of the speech for the child. She takes a greater responsibility for the interaction. During their next interaction, she will expect more responsibility to be

EVERYONE USES SCAFFOLDING STRATEGIES WHEN ASSISTING YOUNG CHILDREN.

shifted onto the child, as evidenced by his recall of events or understanding of *yesterday*.

In another example, the teacher uses verbal and visual cues to help the class represent place values and understand the concept of adding 1 to get the next number.

A teacher in a kindergarten classroom is helping students during calendar time. They are counting the days they've been in school.

"Yesterday was day 129. We used one group of 100, 2 tens, and 9 ones to make 129." The teacher holds each bundle of straws as she says the corresponding number. "What do we need to do to get the next number?"

A few children call out random numbers.

"We can't guess. There's something we need to DO. You need to MAKE the next number. We need to get…."

"One more straw," a child answers.

The teacher proceeds to add the straw representing that day, helping the children make another bundle of 10 to make 130.

SHOWING AND TELLING A CHILD ABOUT AN ACTIVITY IS NOT ENOUGH.

In both of the examples above, the teacher starts with an idea of what children already know and what they need to learn. As the learning experience unfolds, the teacher is constantly re-evaluating their knowledge, seeking to find the gaps that exist and trying to fill them. In this way, she helps children understand new concepts and reach their own conclusions about how to solve problems.

Model the thought process. Just as the young children in our care talk aloud to themselves to aid learning, we can also be voicing our thoughts to help children learn to solve problems. Here, a teacher models the problem-solving process by verbalizing her own inner speech (Kearn 2000).

"Our recipe says that we need 1 cup of flour. I don't have a measuring cup that big. I have a half cup. What could I do with that? How many half cups would I need to make a whole cup?"

Several children give answers.

"I think 2 sounds right. When Matthew had the play dough earlier today, he gave Eli one-half. Then Matthew had 2 pieces: One for himself and one for his friend. So I think 2 half cups is the answer."

In this situation, the teacher provides an explanation and the answer. This represents a great degree of support. She can withdraw degrees of support as the children begin to comprehend and demonstrate the concept of *one-half* on their own. As the teacher voices her method of solving problems, she helps children think about thinking. She is teaching them how to state a problem, come up with probable solutions, weigh the choices, and come to a logical conclusion.

Developing self-help skills

In the early childhood classroom, children work to master life skills, such as proper hand washing, toileting, and dressing. Three scaffolding strategies listed by Lewis (2010) and Anghileri (2006) can be used to assist in the acquisition of self-help skills. These include supporting show-and-tell activities, simplifying the task, and giving feedback.

Show and tell. As children progress through school, they are increasingly able to complete activities based solely on verbal or written directions. This is not the case during early childhood, because young children need to have the desired activity demonstrated in order to facilitate their understanding. We can aid them in their acquisition of practical skills by modeling the activity.

A teacher helps a preschooler as he learns to tie his shoes. She talks about the task as she ties. "First, I take the shoestrings and cross them. Then, I wrap one around, put it through the hole, and pull. Next, I make bunny ears, leaving a long tail. Then I cross the loops, wrap one around, put it through the hole, and pull. All done!"

SCAFFOLDING KEEPS US FOCUSED ON THE ULTIMATE GOAL OF TEACHING.

Yet showing and telling a child about an activity is not enough. The teacher also relies upon feedback from the child. Scaffolding is a give-and-take process, a dance that takes place between the instructor and the learner. Simply showing and telling a young child about the task, while satisfying to the teacher, is static and often results in no true learning.

Teaching requires both awareness of the learner's needs and sensitivity to the learner's response to the instruction provided. For example, can the child in the vignette above now repeat what he has seen, verbally and physically? If not, then which parts does he struggle with? Such feedback is crucial to the learning process. It helps the teacher fill the gaps in the child's understanding.

Simplify the task. This occurs when we reduce the steps needed to complete an activity (Wood, et al. 1976). We can do this by either breaking the task into smaller parts or by reducing the choices available.

Like all toddlers, Peter is eager to help. He tries to clean up a group of scattered toys but gives up quickly because there are so many.

"May I help you?" asks the teacher, sitting down next to him on the floor. She hands him one toy at a time.

After a little help, he is able to remain focused, finishing on his own.

We also simplify the task when we verbally limit the choices for a child, such as by using multiple choice and yes-no questions. Often we begin with an open-ended or more difficult inquiry and then give options when the child is unable to understand or answer the question.

Additionally, teachers can use this scaffolding strategy to aid children in completing tasks that they would be completely unable to do on their own, such as baking a cake. In this case, we can break the task into smaller actions that a child can complete, perhaps measuring the flour or mixing the ingredients.

Give feedback. Responding to children's activities and behaviors is a staple of early childhood instruction. Yet the degree to which feedback is used often determines whether or not learning will occur.

The class is going outside. Maria puts her coat on the floor, pushes her arms through the sleeves, and flips it over her head. But once the coat is on, she realizes that it is upside down.

"Try again," the teacher says. "Make sure it's upside down on the floor. Touch the hood to your toes, like this."

Maria puts on her coat the right way.

"That worked!" the teacher responds. "You can put on your own coat now!"

Here the teacher neither puts the coat on for the child, nor helps too much. She uses the minimum amount of correction necessary to facilitate the child's success. The teacher allows the child to attempt the task, providing appropriate and helpful correction as she assists Maria in successfully putting on her own coat. The appropriate recognition of the child's success affirms the child's own abilities, encourages her to reflect on her accomplishment, and increases the probability that she will successfully attempt and complete the task again.

Implementing scaffolding strategies

While the strategies covered in this article are only a sampling of the scaffolding techniques available to educators, they provide a basis for understanding how to apply scaffolding in the early childhood setting. By examining our use of these approaches and their potential applications, we can improve our teaching and help young children gain understanding and mastery.

As we thoughtfully execute these strategies in our classrooms, we keep in mind three important aspects of effective scaffolding:

■ Appropriate scaffolding takes into account the status of the learner, developmentally and in regard to their understanding of and ability to complete

the task. The teacher prompts and questions to find out what the child understands (Bedrova and Leong 1996).

- Explicit instruction is an essential element of any learning (Overall 2007). The use of scaffolding strategies is deliberate and well-planned, keeping the child's understanding and independent functioning as primary goals. The teacher times "the removal of the scaffolding to enhance the child's successful independent performance of the final behavior" (Bedrova and Leong 1996).
- Effective scaffolding keeps learners within their zone of proximal development (Bedrova and Leong 1996; Berk 1995). Teachers help children complete tasks that are only slightly above the level of those they can accomplish alone.

Stay focused on the goal

Scaffolding strategies are an integral part of instruction in the early childhood classroom. As educators, we need to be mindful of our implementation of these techniques, remaining attentive to feedback from the child, adjusting our teaching strategies accordingly. In this way, we can more effectively help children learn to problem solve and perform self-help skills, ushering them into greater understanding, increased mastery of tasks, and ultimately independent functioning.

Scaffolding keeps us focused on the ultimate goal of teaching: Hearing a child say, "Look! I did it all by myself."

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About the author

Tammy Utchek Lee, M.A., has earned degrees from Morehead State University, Illinois State University, and Wheaton College. She teaches kindergarten and preschool at Children's Christian Learning Center in Elk Grove Village, Ill. She networks with other teachers by presenting at various early childhood conferences in the Chicago area and offering her own, teacher-created classroom materials online.