Questions As a Technique for Scaffolding Children's Learning

by Lila Tekene

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Lila's current research interests are in the area of teacher education focusing specifically at teaching and learning strategies that teachers can use in their interactions with young children.

Teachers can make a difference in children's learning if they provide opportunities for children to engage meaningfully in the learning process. One way to do this is to formulate and ask high-level, open-ended questions to children. We need to revisit the types of questions we ask children and how we structure questioning episodes so that children are given equal opportunities to participate in the process of learning.

Questioning as a teaching technique

Questioning is one of the most common pedagogical techniques, but it is not perceived as a teaching technique in early childhood classrooms. Previous researchers have documented that teachers spent most of their classroom instruction time asking questions to students. This implies that teachers control the questioning process and, therefore, the types of questions that are asked. Teachers' facilitation of questioning, therefore, has a tremendous impact on children's learning and achievement. Children come to believe that teachers' questions are the clues about what is important to learn. You see, the approach that teachers use in processing the questioning episodes determines what children learn and how much (Walsh & Sattes, 2005).

Today we view the process of learning as a largely social activity that involves the teacher offering more opportunities for children to engage in a continued dialogue with others and a competent adult. According to Vygotsky, children learn by interacting with both the environment and the significant other in a classroom. However, if the types of questions that are used in classrooms are low-level closed questions, this limits their learning.

Many researchers have documented the correlation between effective questioning practices and student achievement. For example, Siraj-Bltchford and others in the *Effective Pedagogy in Early Years* study (2002) asserted that open-ended questions are associated with better cognitive achievement. Similarly, the New Zealand Ministry of Education (2003) highlighted questions as one of the quality indicators in early childhood teaching.

Questioning and constructivist theory

The New Zealand early childhood curriculum is deeply embedded in constructivist theory:

- Children learn through interactions between thoughts and the environment.
- Teacher and learner interact as equal partners in the learning process.
- Teacher and learner co-construct learning.
- The learner's prior knowledge and expertise is acknowledged.

Pascal and Bertram (1997) described this relationship as symbiotic because "not only does the adults' style of engagement directly affect the children's level of involvement, but the children's involvement affects the adults' style of engagement" (p. 256). The best questions are the ones that are formulated from the gap between what the child already knows about the content, knowledge they have about other content areas, and knowledge that children have gained from home. Involvement and engagement do not happen simultaneously, but arise out of the disposition of the learner and the professional involvement of the teacher. That is the cornerstone of learning.

Zone of proximal development

The concept of scaffolding is derived from Vygotsky's (1978, cited in Berk, 2004) notion of the zone of proximal development. This zone is defined as the difference between what the child can do by himself

and that which he can do with the assistance of more competent others (adults or older peers). For example, in one of the centres that I visited, the teacher was engaged in a conversation with a group of four- and five-year-old children. The conversation went like this:

Teacher: *Who remembers what we talked about yesterday?*
Child A: *Colour.*
Child B: *Nah . . . green frog.*
Child C: *Yeah (nodding his head).*
Teacher: *Yes, that's right. But what exactly did we say about the green frog? Why does it have the colour green?*
Child D: *Colour helps it survive!*
Child E: *Just like army people wearing green!*
Child A: *Yeah, to hide from enemies.*
Teacher: *Yes, very good, boys. But there's a word for that and we talked about it yesterday.*
Child C: *S-u-r v-i-v-a?*
Teacher: *Good try! But there's a specific word . . .*
Child D: *C-a-m-a-fuss?*
Teacher: *Excellent try, boys! You listened well yesterday. The word is camouflage.*

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Bruner (1996, as cited in Berk, 2004) argues that the teacher and child are in asymmetrical states, with the teacher knowing and understanding more than the child. Therefore, teachers need to take the time to understand what the child already knows in order to scaffold learning to the next level. Questions are central to this process; the level of questions determines whether learning is maximized. As Goncu and Rogoff (1998) argue, "The particular balance of responsibility may have been less important than the active and guided thinking of the learner" (p. 346). This means that the way teachers guide children's thinking is more important than any other role in the learning process. Therefore, the questions that teachers use to guide children's thinking are vital because (as previously mentioned) they are the basis of learning.

Teachers and children as partners in the learning process

So how do teachers make a difference? They can make a difference in children's learning by using teaching strategies that offer more opportunities to children to become equal partners in the learning process. They can use the following approaches to ensure that learning is distributed more evenly among children in classrooms. Teachers need to:

- ensure that the questions they ask are purposeful and clearly focused
- formulate high-level open-ended questions in order to sustain dialogue and promote children's learning
- allow children "think time" before offering feedback
- position themselves in the classroom so they can visualize all children; research shows that low-achieving children tend to choose seats that are not visible to the teachers
- ask one question at a time
- provide children who don't respond to a question with alternate response formats so that they can become equal partners in the learning process.

Formulating high-level open-ended questions takes an effort, but teachers need to ask these types of questions if their purpose is to sustain dialogue in order to promote children's learning. High-level open-ended questions are questions that stimulate children's thinking and have no "right" answers. For example, instead of asking children, "What colour is the sky?" ask them, "Why is the sky blue?". According to Dillion (1989, as cited in Walsh & Sattes, 2005) children engage in four steps when they are asked a question:

- They must attend to the question.
- They must decipher the meaning of the question.
- They must answer the question to themselves.
- They answer the question out loud.

Therefore, it is imperative for teachers to allow time for children to think before they offer responses to the questions. The teacher needs to wait again after a child responds before offering feedback. Teachers need to acknowledge children's responses to encourage dialogue.

Alternative response formats

Two response formats available for teachers to use are Signalled Responses and Putting Heads Together. In signalled response, children signal their responses instead of offering a verbal response. For example, teachers can have children use parts of their bodies to communicate their answers. In discussing addition of one-digit numbers, a teacher could teach children to do "thumbs up" if the answer is right and thumbs down if the answer is wrong, and thumbs sideways if they don't know the answer. In this approach, teachers can easily determine which children understand the concept and who needs more help. In other words, using this approach will also help teachers assess children's learning.

Another alternative response format is asking children a focusing question and then letting them negotiate and solve problems in small groups. The focus of this approach is on having children help each other — especially the non-respondent children — in a collaborative manner. For example, I observed a group of children were about to transit to primary school having a conversation about addition. The teacher was standing aside not intervening unless necessary. Judging from what I heard, I assumed that one of the children, Child B, was having trouble adding numbers. This is part of the conversation that I heard:

Teacher: *If we are going to put our two pencils together, how do we find out how many we have?*
Child A: *Yeah! Add one number and another number.*
Child F: *Yay! Me! Me!*
Child D: *Oh, yeah?*
Child C: *I know the answer! (Starts counting his fingers.)*
Child A: *Me, too! (Starts counting the pebbles on the table.)*
Child D: *Do you know the answer, B?*
Child B: *Shakes his head!*
Teacher: *I wonder how we can help B get the answer.*

(All children come around B and help him count by using the pebbles and fingers to show B).

Child D: *See, one (picking up one pebble), two, and then bring another two and makes it four.*
Child A: *See (folding four fingers) one, two, and then add another one, two (using another hand) makes four.*
Child B: *Oh . . . um . . . um . . . (tries to count using fingers, too).*
Teacher: *What is the answer, B? (B shows two fingers on one hand and two fingers on another hand). Well done, boys!!!*

In conclusion, teachers can make a difference in children's learning in many ways. One approach is using high-level, open-ended questions to stimulate children's thinking and dispositions toward learning. These types of questions also sustain interactions in a classroom. Central to this effort is the teacher's ability to process the questioning episodes so that children are equal participants with the teachers in the process of learning. There are many approaches available, as discussed here, to maximize the potential of learning as a socially constructed process.

Teachers need to acknowledge children's responses to encourage dialogue.

References

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Using Beginnings Workshop to Train Teachers
by Kay Albrecht

Check it out: Observe each teacher for 15 minutes during the school day. Write down each question you hear teachers ask. Then, create a worksheet for teachers to use to restate each as higher-level questions. Repeat the process several times to hone teachers' skills at higher level questioning.

Differences in response to the "four steps": Ask teachers to watch for individual differences in the "four steps" of responding to a question (see page 52). Use this knowledge to individualize questioning further. Use the suggestions for alternative response formats to address the differences you discovered.

Read more about it!: Vygotsky and constructivist theory are worth discovering more about. Use the excellent reference list at the end of this article to add resources to the school's professional library. Consider reading one of the books in a book club format to really expand teachers' knowledge about constructivism.