

thinking about it. Like the blinking of your eyes randomly. You just do it you know. (*statement showing integration of concepts by linking differing aspects*)

JAMIE: And is there anything else I need to know about the two? (*probing question*)

KEISHA: They're both very different jobs. Without them both I guess you got to (unintelligible) both at the same times.

JAMIE: How are they similar—how are the two kinds of muscles similar? (*thinking question*)

KEISHA: Well, they're both muscles. They both make your body function. There's not really a better one between the both of them. They're both needed. (*statement showing integration of concepts by linking differing aspects—evaluation statement*)

JAMIE: How did you figure that out? (*thinking-about-thinking question*)

KEISHA: Well I pictured them—and then looked at the picture to compare. (*statement showing unpacking of the thinking process*)

JAMIE: Okay, that's good. (*feedback and praise*) Your turn.

Jamie begins the discussion by asking a review question. In asking Keisha to "Summarize involuntary muscles in your own words," Jamie is prompting Keisha to review the lesson. She is also assessing how well Keisha understands the term *involuntary muscles*. Keisha's response shows that she understands the term well. Nevertheless, Jamie probes to see if there is more to tell by asking a probing question. "Is there anything else? Like is there anything else I need to know about an involuntary muscle?" After no further elaboration from Keisha, Jamie gives feedback on the accuracy of Keisha's answer and asks a second review question. Although Keisha's answer is accurate (and Jamie gives her feedback to that effect), Jamie follows up with a probing question that asks Keisha to be explicit by giving an example. The response that Keisha makes is a well-elaborated example having to do with hitting a ball with a bat. Her example shows that she can apply her definition of voluntary muscles to an everyday activity.

At this point it appears that Jamie has decided that they have established an agreed-on understanding of what voluntary and involuntary muscles are. With that knowledge base established, Jamie (after providing feedback on the accuracy of Keisha's answer) goes on to ask Keisha to compare the two kinds of muscles so as to identify their differences and later on, their similarities—both are high-level thinking questions. Keisha's initial response shows integration of concepts by linking differing aspects of the two kinds of muscle; and after Jamie probes for more (by asking "And is there anything else I need to know about the two?"), Keisha goes on to develop a more elaborated comparison-contrast between the two kinds of muscle.

When she says "There's not really a better one between the both of them. They're both needed," Keisha shows that she has evaluated the role of the two kinds of muscles and arrived at a judgment about their relative value based on the criteria of function. Evaluation is considered a very high level of cognitive

4. Discourse Patterns for Mediating Peer Learning

activity (Bloom, 1956). When Jamie asks Keisha to monitor her own thinking process (by asking a metacognitive question, "How did you figure that out?"), Keisha's response shows that she is aware of using a visualization strategy and she is able to articulate about it.

It should be noted that, throughout the students' interaction, Jamie supports Keisha's responding activity by giving feedback (e.g., "Good," "Okay," and "Okay, that's good") and by waiting after she asks a question to allow Keisha some time to think about her response before making it. Although, in the research study that this dialogue is taken from (King et al., 1998), tutoring pairs generally gave feedback and thinking time, they did not use another of their trained supportive communication skills: providing encouragement. Regarding questioning, tutors stayed in the questioning mode almost exclusively; and they asked all of the five kinds of questions with the exception of hint questions. Apparently, asking hint questions in a situation as spontaneous as transactive tutoring is very difficult.

Effectiveness of the Peer Tutoring Discourse Pattern

A guided sequenced-questioning model of peer tutoring, called ASK Your Partner to Think[®] (developed previously by King, 1993), is identical to ASK to THINK—TEL WHY[®] except that it lacks the thinking-about-thinking type of questions. An experimental study was conducted comparing that guided sequenced-questioning model of tutoring to use of two other models of peer tutoring, a questioning-explanation model and an explanation-only model (King et al., 1998). That study was designed to assess the effectiveness of that guided sequenced-questioning tutoring model and to determine the role of the sequenced-questioning component of the model (King et al., 1998). Performance data from fact and inference tests revealed that seventh-grade students using the sequenced-questioning model outperformed their classmates who used the other two models of tutoring. The sequenced-questioning model of tutoring was found to promote knowledge construction, knowledge retention, and ability to transfer. Analysis of peer interaction data of pair tutoring sessions showed clear differences in patterns of discourse among the three experimental conditions. In all three conditions, the discourse patterns corresponded to the patterns of interaction in which students were trained; and across treatments, the tutoring pairs that demonstrated the highest level of learning also engaged in the highest level of elaborated discussion. We concluded that the sequenced-questioning component of that tutoring model played an important role in its effectiveness.

More recently, a study was conducted to determine what role the metacognitive questions in ASK to THINK—TEL WHY[®] might play in a sequenced-questioning tutoring process (King et al., 1996). The ASK to THINK—TEL WHY[®] model of tutoring was compared to the ASK Your Partner to THINK[®]