MODEL2TALK: An intervention to promote productive classroom talk

This chapter is based on:
Abstract
This article describes the MODEL2TALK intervention, which aims to promote young children’s oral communicative competence through productive classroom talk. Productive classroom talk provides children in early childhood education with many opportunities to talk and think together. Results from a large-scale study show that productive classroom talk has a positive effect on young children’s oral language abilities. This is of great importance as good oral communicative competence is related to later reading comprehension skills and social acceptance and mediates learning, thinking, and self-regulation. Teachers can promote productive talk in their classrooms by giving children more space to share their ideas, listen to one another, reason, think together, and reflect on their communicative performance. The examples in this article support teachers to adopt productive talk and move toward a classroom culture in which children think and communicate together.

Teaser
How can teachers promote young students’ oral communicative competence through productive classroom talk? This article shows how to do it and what opportunities it might create for teachers and their students.

Pause and Ponder
- Reflect on whole-group/small-group conversations in your classroom. Who talks most, you or your students?
- As a teacher, how much space do you give students to share their own ideas?
- Make a list of conversational ground rules that are used in your classroom.
4.1 Introduction

“Dex, will you explain that again?” asked early childhood teacher Miss Anna (all student and teacher names are pseudonyms). Together with 17 preschoolers (ages 4-6), Miss Anna has been talking about ladybugs. As a first step, they have watched a short video on a flying ladybug. Dex discovered that when a ladybug is going to fly, it has to open the red parts on its back, but the other students still don’t get what he means.

01 Dex: Look, I saw that red part [the elytra, which shields the wings] when it was going to fly.
02 Dana: And then – that was actually. I think he means that it’s protection for his wings.
03 Bo: But also for itself a little bit.
04 Teacher: Yeah, that’s also what I meant.
05 Miss Anna: But um, um – Dana, you were saying that it gives protection for its...?
06 Dana: Um, um – [wings]. For his wings [yeah]. Because otherwise it will damage its wings and then, then he won’t be able to fly very well.
07 Achmed: Like a butterfly [yeah].
08 Dana: No, because a butterfly has its own wings, but a ladybug goes like... If you look very carefully – his wings – that red thing goes up like this.
09 Miss Anna: Yeah
10 Dex: Yeah, that’s what I meant.

In this short excerpt of a classroom discussion, young students think and talk together on a shared topic. They exert effort to convey their communicative
meanings and make sure that all students understand what they mean. Further, the students use academic language such as domain-specific vocabulary, complex syntax and specific discourse functions such as explanation and argumentation (Barnes, Grifenhagen, & Dickinson, 2016).

Yet, what about the teacher? Miss Anna does not talk very much. In only two turns, she encourages Dex to say more and revoices (see Ferris, 2013) Dana’s contribution to check if she understood her. By giving students space to talk and think together, Miss Anna encourages them to make progress collaboratively in thinking about their shared topic, the ladybug.

This article presents the MODEL2TALK intervention, which aims to promote productive classroom talk in early childhood classrooms. MODEL2TALK is based on the use of several teacher talk moves (or tools) that can be used to encourage children to (a) share, expand or clarify their initial ideas or thoughts; (b) listen to one another and take other’s ideas seriously; (c) deepen their reasoning; (d) think together and build on another’s ideas; and (e) reflect on their communicative performance.

Based on the results of our studies, we will show that MODEL2TALK supports teachers to move toward a classroom culture in which students think and communicate together. Such a classroom culture improves student’s oral communicative competence, defined as the ability to communicate appropriately in different sociocultural contexts (e.g., Roth & Spekman, 1984; Schiefelbush & Pickar, 1984). Supporting students' oral communicative competence is important because it is positively related to successful reading comprehension (Snow, 2002); mediates learning, thinking, and self-regulation (e.g., van Oers, Wardekker, Elbers, & van der Veer, 2008); and can be considered an important qualification for participation in today’s globalized knowledge society. Throughout this article, we will show how early childhood teachers can make their classroom conversations more productive.
4.2 Productive classroom talk: What is it?

Over the past few decades, there have been many attempts to involve students in classroom talk in which they talk, think, and reason together; carefully listen to one another; negotiate meanings; and collaboratively make progress in their thinking. In this article, we will refer to this type of talk as *productive classroom talk*. Productive classroom talk stands in contrast to traditional classroom talk, which has been criticized for being too monologic in nature, overly teacher steered, and mainly focused on the reproduction of factual knowledge. An example of this is the well-known Initiation-Response-Evaluation pattern, in which the teacher asks a closed question followed by a short response from one student, after which the teacher evaluates this response (often in term of right or wrong; see, e.g., Mehan & Cazden, 2015; van der Veen, van Kruistum, & Michaels, 2015). In productive classroom talk, teachers aim to move beyond these patterns of recitation and involve their pupils in dialogic talk that supports their academic learning and thinking (van der Veen, de Mey, van Kruistum, van Oers, 2017).

What does a classroom culture of productive talk look like? We will briefly describe three international programs that aim to implement productive classroom talk. These programs show many similarities because they all aim to establish a dialogic classroom culture. In the first program, Mercer and his colleagues at the University of Cambridge developed the Thinking Together program, in which students learn to reason and share knowledge through exploratory talk (Dawes, Mercer, & Wegerif, 2004; Mercer, Wegerif, & Dawes, 1999). Exploratory talk is a kind of talk in which children listen, reason, and collaboratively seek agreement. An important aspect of the Thinking Together program is the use of conversational ground rules, such as ‘We give reasons to explain our ideas’.

Second, at the University of Pittsburg, Resnick and her team developed a similar program: Accountable Talk. Accountable talk is defined as classroom talk (both by students and teachers) that supports students to attend to the classroom
community, to knowledge, and to accepted standards of reasoning (Michaels, O'Connor, & Resnick, 2008). In Accountable Talk classrooms, students reason, think together, build on one another’s ideas, and are held accountable for the knowledge that they put forth. As such, this approach aims for a classroom culture that supports equity and access to academic learning through talk.

Third, Michaels and O’Connor’s work on academically productive talk builds on their work with Resnick (Michaels et al., 2008) and highlights the use of several productive talk moves that teachers can use as tools to encourage children to (a) share, expand, and clarify their thinking (e.g., ‘Can you say more about it?’); (b) listen carefully to one another (e.g., ‘Who think they understood what Alex just said and can put it into their own words?’); (c) deepen their reasoning (e.g., ‘Why do you think that?’); and (d) think with others (e.g., ‘Do you agree or disagree? Why?’; Michaels & O’Connor, 2012; 2015). In contrast to Accountable Talk, Michaels and O’Connor focus on a set of specific talk moves that teachers can use to give students more space to talk, listen, reason, and think together. It is important to note that these talk moves are not sufficient in and of themselves. Talk moves are tools that have to be used with good content and by a knowledgeable teacher to support students to talk together. Productive classroom talk is always an interactional achievement, guided by the teacher, linking academic content and students with one another.

Research on classroom talk has shown that productive classroom talk, as opposed to monologic classroom talk, is positively related to students’ learning and development (for an overview of this research, see Cazden, 2001; Howe & Abedin, 2013; Resnick, Astherhan, & Clarke, 2015). Nystrand and Gamoran (1991), for example, found in a large study in 58 eighth-grade English literature classrooms that instruction including open and authentic questions is positively related to students’ performance in English literature. A carefully controlled study by O’Connor, Michaels, and Chapin (2015) showed that sixth-grade students participating in productive classroom talk in which they collaboratively discussed integers and ratios
outperformed students in the matched direct instruction classroom, based on pre- and postassessments, over a brief period of instruction (two or three days). In a larger, multiyear study, O’Connor and colleagues found that students who participated in productive talk in math on a regular basis outperformed matched students in traditional classrooms on standardized tests in both math and English language arts. Kiemer, Gröschner, Pehmer, and Seidel (2015) showed that participation of secondary education students (aged 15-16) in productive classroom talk had a positive effect on students’ perceived autonomy and intrinsic learning motivation as compared to students participating in traditional classroom talk. Finally, Wegerif, Mercer, and Dawes (1999; see also Rojas-Drummond, Gómez, & Vélez, 2008) showed that the use of exploratory talk improved both group reasoning and individual nonverbal reasoning as measured with a standardized test.

Although multiple studies have shown that productive classroom talk is positively related to students’ learning, much remains unknown about the benefits of productive classroom talk in early childhood classrooms. As early childhood is a critical period for language learning, we argue that it is important to invest in a language-rich educational environment (cf. Farkas & Beron, 2004; see also Barnes et al., 2016). Productive classroom talk provides students in early childhood education with many opportunities for language learning, including vocabulary learning, listening, and speaking skills. Furthermore, many studies in the research areas of classroom dialogue have been small-scaled, made use of qualitative methods, and mainly focused on productive talk in small-group settings (see Howe & Abedin, 2013). It remains unclear whether the promising results of productive classroom talk can be transferred to whole-class contexts. Finally, much of the research has focused on productive classroom talk in relation to students’ content learning. Yet, do students’ oral communicative abilities also improve when they are actively involved in productive classroom talk?

As previously mentioned, oral communicative competence is regarded as the combination of knowledge, skills, and attitudes that “enables a speaker to
communicate effectively and appropriately in social context” (Schiefelbush & Pickar, 1984, p. ix) and is of great importance for children’s self-regulation, learning and thinking (van Oers et al., 2008; Whitebread, Mercer, Howe, & Tolmie, 2013). For example, previous research has indicated that children’s oral communicative abilities are related to the degree to which they are accepted by peers (e.g., Fujiki et al., 1999; Gertner, Rice, & Hadley, 1994), which is, in turn, predictive of multiple later outcomes such as academic success and sociability (e.g., Braza et al., 2009; Nærland, 2011).

Because of the importance of oral communicative competence, we believe that more insight is needed into how productive classroom talk might support the development of young students’ oral communication skills. Therefore, in our research project, we developed an intervention to promote young students’ oral communicative competence through productive classroom talk in whole-class settings. First, we will give a description of the intervention and associated teacher Professional Development Program (PDP) and show how early childhood teachers can implement productive talk in their classrooms. Second, we will report on the results of research in which we studied the effects of the MODEL2TALK intervention in several early childhood classrooms.

### 4.3 MODEL2TALK intervention

Drawing on research on classroom talk and dialogue, we designed the MODEL2TALK intervention in which we aimed to promote productive talk in early childhood classrooms. It consists of (a) a PDP through which teachers are supported to implement productive talk in their classroom, (b) a set of productive talk tools that support teachers to orchestrate productive classroom talk, (c) a teacher manual with suggestions and materials for six thematic whole-class discussions in which
teachers can practice the use of these talk tools, and (d) materials that support teachers to plan and evaluate productive classroom talk.

**PDP for productive classroom talk**

Learning to orchestrate productive classroom talk requires effort. For teachers, it is a challenge to get all students to share their ideas publicly, listen to one another, progress in shared thinking, and so on (Michaels & O’Connor, 2015). Therefore, to support teachers to become skillful orchestrators of productive classroom talk, intensive guidance inside the classroom is needed (cf. van der Veen, Dobber, & van Oers, 2016). Our six-week MODEL2TALK PDP consisted of a two- to three-hour workshop, six videotaped whole-class discussions, and five reflection sessions (see Table 4.1).

<table>
<thead>
<tr>
<th>Week 1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
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</thead>
<tbody>
<tr>
<td>Classroom discussion 1</td>
<td>Classroom discussion 2</td>
<td>Classroom discussion 3</td>
<td>Classroom discussion 4</td>
<td>Classroom discussion 5</td>
<td>Classroom discussion 6 (post-observation)</td>
</tr>
<tr>
<td>Workshop</td>
<td>Reflection session 1</td>
<td>Reflection session 2</td>
<td>Reflection session 3</td>
<td>Reflection session 4</td>
<td>Reflection session 5</td>
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</table>

In order for our PDP to be effective, we decided to situate it at the teachers’ school, focus on pedagogy (i.e., orchestrating productive classroom talk), connect it with daily classroom activities, and include classroom observations and interactive feedback (van Veen, Zwart, Meirink, & Verloop, 2010). We began our PDP with a pre-observation of a whole-class discussion on the platypus. This observation functioned as a pre-measurement of the teachers’ ability to orchestrate a classroom
discussion. After, we organized a two- to three-hour workshop that took place at the teachers’ school in which we discussed the idea of productive classroom talk and the development of students’ oral communicative competence, presented a list with productive talk tools (see Table 4.2), and watched and analyzed video examples of productive classroom talk.

Table 4.2

<table>
<thead>
<tr>
<th>Productive talk tool</th>
<th>Description and examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Share, expand, clarify</td>
<td>Encourage students to share, expand, or clarify their initial ideas or thoughts.</td>
</tr>
<tr>
<td>1.1 Time to think</td>
<td>“Let’s take a minute to think about it.”</td>
</tr>
<tr>
<td>1.2 Say more</td>
<td>“Can you say more about...?”</td>
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<tr>
<td>1.3 Revoicing</td>
<td>“So, you are saying...?”</td>
</tr>
<tr>
<td>2. Listen to one another</td>
<td>Encourage students to carefully listen to one another and take one another’s ideas seriously.</td>
</tr>
<tr>
<td>2.1 Repeat or rephrase</td>
<td>“Who can repeat what Alex just said?”</td>
</tr>
<tr>
<td>3. Reasoning</td>
<td>Encourage students to deepen their reasoning.</td>
</tr>
<tr>
<td>3.1 Why</td>
<td>“Why do you think...?”</td>
</tr>
<tr>
<td>3.2 Challenge or counterexample</td>
<td>“Does it always work that way?”</td>
</tr>
<tr>
<td>4. Think together</td>
<td>Encourage students to think together and build on one another’s ideas.</td>
</tr>
<tr>
<td>4.1 Agree or disagree</td>
<td>“Do you agree with Michael’s idea? Why?”</td>
</tr>
</tbody>
</table>
4.2 Add on

“Who can add on Bo’s idea?”

4.3 Explaining to someone else

“Who can explain what Sara means?”

5. Metacommunication

Encourage students to reflect on their communicative performance and the understandability of their oral messages.

5.1 Metacognitive guidance

“I don’t know/understand what you mean.”

5.2 Conversational ground rules

“Why is it important that we listen carefully to one another?”


In the five weeks after the workshop, teachers orchestrated five different classroom conversations (one per week), which enabled them to practice leading whole-class productive discussions. Each classroom discussion was followed by a 30-60-minute reflection session in which episodes from the video observations were watched, analyzed, and discussed together with the first author of this article. These reflection sessions focused on the teachers’ use of productive talk moves and the development of students’ oral communicative competence.

Teacher’s manual

In our MODEL2TALK intervention, we provided all teachers (both in the intervention and in the comparison condition) with a manual, in which we gave suggestions for six thematic classroom discussions on animals. Once every week, teachers orchestrated a whole-class discussion on another animal. Sometimes this was an extraordinary animal from far away; other times, it was a familiar one from the students’ direct environment. The platypus, the water strider, the rhino, the ant, the mouse, and the ladybug were all discussed.
In the teacher’s manual, we provided the teachers with some background information on each animal, a video or picture that could be shown at the start of or during each discussion, and some general topics that could be discussed, such as ‘Describe in detail what this animal looks like’, ‘What and how does it eat?’, ‘Is it a male or female, and why do you think so?’ , ‘Does this animal have friends or enemies? Why do you think so? And how does it protect itself against enemies?’ In each discussion, the same general topics were discussed. Next to general descriptions for each classroom discussion, we provided teachers in the intervention condition with tools that could be used to plan and evaluate the discussions. The planning and evaluation tools were also used during the reflection sessions to familiarize teachers with this instrument (see Figure 4.1).

Productive talk tools

As mentioned previously, leading a productive classroom discussion is a challenging endeavor. So, how can teachers be supported to become skillful orchestrators of these discussions? Over the past few decades, a lot of classroom-based research has been done that has resulted in a set of talk tools that help teachers to lead (whole-class) academically productive discussions (Anderson, Chapin, & O’Connor, 2011; Michaels & O’Connor, 2012; O’Connor & Michaels, 1993; 1996; van der Veen et al., 2017). In general, these talk tools seek to increase the participation of all students and to encourage them “to engage in more sophisticated forms of reasoning” (Mehan & Cazden, 2015, p. 19). Furthermore, they support both teachers and students to establish a classroom culture of shared thinking and communicating and to socialize students into academic discourse (see also Barnes, Grifenhagen, & Dickinson, 2016; Mehan & Cazden, 2015). An overview of the productive talk tools used in our MODEL2TALK intervention is given in Table 4.2.
Figure 4.1. MODEL2TALK logbook and evaluation tool

<table>
<thead>
<tr>
<th>Planning</th>
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<tbody>
<tr>
<td><strong>Date</strong></td>
</tr>
<tr>
<td>Short description of classroom conversation: topic, talk formats</td>
</tr>
<tr>
<td>Learning objectives: communication and conversation skills (for example, listening skills, questioning, shared thinking, reasoning, conversational ground rules)</td>
</tr>
<tr>
<td>What is my role as teacher and which of the productive talk tools will I use during this conversation?</td>
</tr>
<tr>
<td>Are there any specific children or things in this conversation that will have my specific attention?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Evaluation</th>
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<tbody>
<tr>
<td>Short and general reflection on the conversation</td>
</tr>
<tr>
<td>Was the conversation meaningful? Could children participate and did they want to do so? What behavior did you observe?</td>
</tr>
<tr>
<td>Which communicative and conversational skills did the children show? Did I reach my learning objectives? Why or why not?</td>
</tr>
<tr>
<td>What was my contribution to the conversation? Did I use the talk tools in a productive and meaningful way? Why or why not?</td>
</tr>
<tr>
<td>What did I learn from this conversation as a teacher? How did it contribute to my professional development?</td>
</tr>
<tr>
<td>This is what I want to try next time or this is something I keep in mind.</td>
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</tbody>
</table>
4.4 MODEL2TALK: Does it work?

Establishing a classroom culture of shared thinking and communicating requires both time to socialize students in this classroom culture and professional development of teachers to do so. Our MODEL2TALK intervention aims to support teachers to engage their students in productive classroom talk. Yet, does our intervention work, and what does it mean for teachers and students? What opportunities for learning does it afford?

Research design

As a first step, we conducted a design-based study in which the (re)design of our intervention, together with teachers, was the central aim (van der Veen, van Oers, & Michaels, 2014). We then conducted a large-scale study with a pre-test-intervention-post-test design in which we tested the effect of the MODEL2TALK intervention (for more details on the design of this study, see van der Veen et al., 2017). A total of 21 teachers and 469 students (mean age = 5.0 years) from 11 schools participated in this study: 12 teachers in the intervention condition and nine teachers in the comparison condition.

We asked all participating teachers to lead the same six classroom conversations on animals. In both the intervention and comparison condition, we video recorded the first and final classroom conversations. After the first classroom conversation on the platypus (i.e., the pre-observation), the teachers in the intervention condition participated in our MODEL2TALK PDP.

Students were individually tested on their oral communicative abilities using the Nijmegen Test of Pragmatics (Embrechts, Mugge, & van Bon, 2005) before and after the intervention. The Nijmegen Test of Pragmatics measures students’ conversation skills and communicative functions using richly illustrated pictures about a family living in a house. Through a story about this family, different conversational and communicative skills are elicited (e.g., turn-taking, repeating or
clarifying in case of ambiguity, ending a conversation, giving information, providing instruction). Further, before and after the intervention all students were asked 15 subject-matter knowledge questions related to the animals that they discussed in the six classroom discussions. We used multilevel modelling to analyze the effect of the MODEL2TALK intervention on students’ oral communicative competence and subject matter knowledge (van der Veen et al., 2017).

**Results**

The analysis of our data yielded the following results (for more details, see van der Veen et al., 2017; van der Wilt, van der Veen, van Kruistum, & van Oers, 2017; van der Wilt, van Kruistum, van der Veen, & van Oers, 2016):

1. MODEL2TALK supports teachers to orchestrate productive classroom talk.
2. Fidelity of the MODEL2TALK intervention was high.
3. Students’ oral communicative competence was significantly improved.
4. Our intervention did not have an effect on students’ subject matter knowledge.
5. Students’ oral communicative competence was significantly related to their level of social acceptance.

**Implementing productive classroom talk**

Teachers in the intervention condition found the productive talk moves to be helpful tools in supporting students’ shared thinking and communicating. In a relatively short intervention period, they were able to use these talk moves in their classroom discussions. We analyzed a five-minute episode of each of the 21 participating teachers to explore the frequency of productive talk moves used as a percentage of the total number of teacher turns. A comparison of both conditions showed that the fidelity of the MODEL2TALK intervention was high: Teachers in the intervention condition used significantly more productive talk moves (44.12%) than teachers in the comparison condition did (16.46%).
At the beginning of this article, we showed an example of a productive classroom discussion. This example is a fragment from the post-observation in one of the classrooms that participated in the MODEL2TALK intervention. In this example, Miss Anna used several of the productive talk moves and gave students space to think and reason. The students in Miss Anna’s classroom think together, refer to one another’s ideas, and make relatively long contributions. In contrast, in the comparison condition, classroom conversations remained overly teacher-steered and focused on the recitation of factual knowledge. Also, students in the comparison condition were given less space to think and communicate together, resulting in shorter responses and, consequently, fewer opportunities to improve their oral language abilities. The following excerpt from a conversation in the classroom of Miss Lotte’s classroom illustrates this:

Miss Lotte: What do we see exactly if we look at the picture [of the ladybug] on the screen?
Miss Lotte: What do we see, Almira?
Almira: His wings.
Miss Lotte: You can see his wings. And what do you see on its wings?
Sara: Dots.
Miss Lotte: Yeah, dots, that’s correct. And how many dots do you see?
Adam: One, two, three, four, five.
Miss Lotte: We can see five dots now, right [points at the picture on the screen]. There are one, two, three dots on this side; one in the middle; and one there. Could there also be two dots on the other side?
Amelie: Yeah.
Miss Lotte: Just like here, right.
Productive classroom talk improves students’ oral communicative competence

Our analyses of students’ pre-test and post-test oral communicative competence scores showed that the MODEL2TALK intervention had a significant effect, and the effect size was moderate to large. Students in the intervention condition outperformed students in the comparison condition on the post-test (see Figure 4.2). Based on our analyses, we can conclude that productive classroom talk improves young students’ oral communicative competence.

Figure 4.2. Mean communicative competence scores compared between condition and measurement occasion

Do students gain more knowledge?

Surprisingly, students in our intervention condition did not gain more knowledge during the MODEL2TALK intervention. On the pre-test, students in the intervention condition significantly outperformed students in the comparison condition; on the post-test, no differences between conditions were found (see Figure 4.3). One explanation might be that the classroom conversations in the
comparison condition were often highly structured and covered most of the content from the teacher’s manual. In the intervention condition, however, students were encouraged to share their ideas, reason, and think together. As a consequence, they often came up with unexpected ideas and interesting questions that were beyond the scope of the teacher’s manual and our subject-matter knowledge test.

*Figure 4.3.* Mean subject-matter knowledge scores compared between condition and measurement occasion

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**Oral communicative competence related to social acceptance**

In one of our sub-studies, we investigated the relation between young students’ level of oral communicative competence and the degree to which they were accepted by their peers. Our analyses showed that students’ oral communicative competence is significantly related to their social acceptance (van der Wilt et al., 2016; 2007; see Figure 4.4). The outcomes of this sub-study stress the importance of promoting students’ oral communicative competence. Our MODEL2TALK intervention provided teachers with concrete and easy-to-use tools to do so.
4.5 Conclusion

Our research shows that productive classroom talk promotes young students’ oral communicative competence. This is of great importance, as students’ oral communicative competence has been demonstrated in several other studies to mediate self-regulation, learning, and thinking and has been positively related to reading comprehension (Snow, 2002) and social acceptance. How can you support productive talk in your own classroom? Start by giving students more space to share their ideas, listen to one another, reason, think together, and reflect on their
communicative performance. In this article, we have provided some suggestions to do so.

**Take action!**

- Start with a discussable topic that students can and want to talk about.
- Begin by selecting one or two talk moves and practice them in a classroom discussion.
- Discuss the conversational ground rules with the students in your classroom.
- Try to listen carefully to your students.
- Video record your classroom discussion.
- Watch and analyze your discussion. What was your role as a teacher? How much space did you give students to talk and think together? How did you use the talk moves, and what was the effect on the students?
- Ask a colleague to observe one of your classroom discussions.

**More to explore**

- Try the Thinking Together teacher materials from the University of Cambridge: https://thinkingtogether.educ.cam.ac.uk/.
- Watch The Inquiry Project’s videos about the theory and practice of productive classroom talk: http://inquiryproject.terc.edu/prof_dev/library.cfm
References


Snow, C.E. (2002). Reading for understanding: toward a research and development program in reading comprehension. Santa Monica, CA: RAND.


