General conclusion and discussion

*Parts of this chapter are based on:*
7.1 Summary and contributions of this dissertation

The aims of this dissertation were to explore the concept of dialogic (or productive) classroom talk; theorize how dialogic classroom talk contributes to children's dialogical capacities using both cultural-historical activity theory and Dialogical Self Theory; develop and implement an intervention to promote dialogic classroom talk in early childhood education; and to investigate the effect of dialogic classroom talk on young children's oral communicative competence. Conceptual explorations (part 1) were combined with theory-driven empirical studies (part 2) to advance the field of research on classroom talk and dialogue and to contribute to the improvement of educational practice.

In chapter 1, we presented the theoretical framework that was used in this dissertation, briefly described our methodological perspective and the context (i.e., early childhood classroom in the Netherlands) in which our research was conducted, and presented the outline of this dissertation.

Conceptual explorations of dialogic classroom talk

In the first part of this dissertation, we studied dialogic classroom talk conceptually using cultural-historical activity theory and Dialogical Self Theory.

In chapter 2, we gave a more detailed description and characterization of what we mean by dialogic or productive classroom talk. Taking the work of Sarah Michaels and Cathy O'Connor (2012) on academically productive classroom talk as a starting point, we argued that classroom talk is both a context in which children are supported to learn new things (i.e., talking to learn), and a means by which children learn to talk and communicate in new ways (i.e., learning to talk). Reasoning from a cultural-historical perspective, we argued that for classroom talk to be productive, dialogic, and accountable to knowledge, participants should be willing and able to understand each other, revise their own situated understandings in light of new evidence, and question each other's arguments (see also Bereiter, 1994). As a next step,
we described three interrelated parameters to characterize dialogic classroom talk. First, we argued that dialogic classroom talk has a topic (or object) that gives direction, purpose, and duration to the dialogue. This topic determines what ideas (which we refer to as “predicates”) are accepted or negotiated by the participants, and support the group’s progress in thinking about a topic. Second, in dialogic classroom talk children are given space to talk and think together. It was argued that these spaces make it possible for different positions to be voiced positions, and might create an intersubjective orientation in which children not only reflect on their own understandings, but also try to understand each other’s (cf. Gadamer, 2004). Teachers have an important role in creating these spaces by using several dialogic talk moves that research has shown to be productive. Third, we argued that for classroom talk to be productive it should both contain a dialogue between persons, as well as a polylogue with knowledgeable cultural-historical others that are not physically present inside the classroom. Introducing these voices, for example through non-fiction, informational texts, supports the group to evaluate their local dialogical agreements within a wider cultural-historical context (Dobber & van Oers, 2015).

Our conception of dialogic classroom talk presented in this chapter can be used as a heuristic for teachers to orchestrate productive classroom discussions that can (or might) be beneficial for children’s meaningful learning.

In chapter 3, we used Dialogical Self Theory (Hermans & Hermans-Konopka, 2010; Hermans, 2001) to theorize how classroom talk might contribute to the development of children’s dialogical capacities and self. We started our argument with the observation that in today’s globalized society, classrooms have increasingly become places where different perspectives, cultures, and religions meet. This might give children possibilities to broaden their horizons, and enter new worlds. However, teachers and children might experience these heterogenous classrooms as confusing, difficult, and threatening as well. Therefore, we argued that children need well-developed dialogical capacities to deal with diversity and otherness. These capacities can be developed by inducting children into dialogic classroom talk in which they
meet and negotiate different perspectives, and engage in ‘self-persuasive discourse’. Furthermore, we argued that in dialogic classroom talk the voiced positions of others might interact with and become part of the self (cf. Vygotsky’s notion of the internalization of interpersonal dialogue). To support our argumentation, we provided examples from our empirical studies to show (1) how children in dialogic classroom talk make an effort to understand the ideas that have been voiced by others, and (2) how interpersonal dialogue becomes internalized, or, in other words, how the voices of others get taken up and become part of the self.

**Theory-driven empirical explorations of dialogic classroom talk**

In the second part of this dissertation, we build on the conceptual framework presented in chapters 2 and 3 to explore dialogic classroom talk empirically. The aims of the theory-driven empirical studies were to develop and implement an intervention to promote dialogic classroom talk in early childhood education, and to understand the effects of dialogic classroom talk on young children’s oral communicative competence. This second part is referred to as theory-driven, as we used our conceptual work presented in the first part of this dissertation to give meaning to the data collected in our empirical studies.

In chapter 4, we presented and discussed the development of an intervention and associated Professional Development Program (PDP) to promote dialogic (or productive) classroom talk in early childhood classrooms, the MODEL2TALK intervention. In developing the MODEL2TALK intervention, we drew on three international programs that aim to promote dialogic classroom talk. First, the Thinking Together program developed by Mercer and his colleagues at the University of Cambridge, in which primary education students learn to reason and think together through exploratory talk (Dawes, Mercer, & Wegerif, 2004; Wegerif, Mercer, & Dawes, 1999). Second, a program developed by Resnick and her colleagues at the University of Pittsburgh: Accountable Talk (Michaels, O’Connor, & Resnick, 2008). In the Accountable Talk program, students reason, think together, build on one another’s
ideas, and are held accountable to the community of conversational partners they are engaged with, and for the knowledge and reasoning they put forth. Third, a program developed by Michaels and O’Connor on academically productive classroom talk that highlights the use of several productive talk moves that teachers can use to encourage students to talk and think together (Michaels & O’Connor, 2012; O'Connor & Michaels, 1993; 1996).

The MODEL2TALK intervention consists of (a) a PDP that supports teachers to implement dialogic classroom talk in their classrooms, (b) a set of dialogic talk moves that teachers can use to orchestrate dialogic classroom talk (see Appendix A), (c) a teacher manual with suggestions and materials for six whole-class discussions to practice the use of the talk moves, and (d) materials that support teachers to plan and evaluate dialogic classroom talk.

We concluded chapter 4 by briefly presenting the most important results of the MODEL2TALK intervention: (a) it supported teachers to orchestrate dialogic classroom talk, (b) fidelity of the intervention was high, (c) children’s oral communicative competence was significantly improved, (d) no effect on children’s subject matter knowledge was found, and (e) children’s oral communicative competence was significantly related to the degree in which they were accepted by their peers (van der Wilt, van Kruistum, van der Veen, & van Oers, 2016; van der Wilt, van der Veen, van Kruistum, & van Oers, 2017).

In chapter 5, we used a design-based approach to develop, implement, and evaluate the MODEL2TALK intervention presented in chapter 4. We argued that the cyclic character of design-based research allowed us to simultaneously develop and evaluate our intervention in close collaboration with teachers. Over the course of two iterative cycles, the four participating teachers orchestrated classroom discussions twice a week, alternately in a small- and whole-group setting. This study had a total duration of 18 weeks.

Pre- and post-tests of children’s ($N = 92$) oral communicative competence on three measurement occasions indicated that our intervention significantly
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ccontributed to children’s oral communicative competence, with medium to large
effect sizes. Furthermore, analyses of pre- and post-observations of classroom talk
showed that children used more key linguistic features of oral communicative
competence (such as, ‘because’, and ‘I/she/he mean(s)...’) over the course of our
intervention.

With respect to the teacher, pre- and post-observations of classroom talk
indicated that teachers were able to move towards a dialogic classroom culture. Our
data indicated that they used more dialogic talk moves in the post-observation than
in the pre-observation.

Finally, the relatively small-scaled, exploratory nature of the study presented
in this chapter, allowed us to fine-tune the intervention and PDP, before
implementing and evaluating it on a large-scale (Borko, Jacobs, & Koellner, 2010).

In chapter 6, a large-scaled, quasi-experimental study on the effects of
dialogic classroom talk on young children’s oral communicative competence and
subject-matter knowledge was described. A total of 21 early childhood teachers and
469 children (aged 4-6 years) participated in this study: 12 in the intervention
condition and nine in the comparison condition. Over the course of our six-week
intervention, all participating teachers orchestrated the same six classroom
conversations related to the theme ‘what animal is that? (see Appendix B). Teachers
in the intervention condition participated in our PDP, consisting of a workshop on
dialogic classroom talk, weekly classroom conversations to practice the use of dialogic
talk moves, and reflection sessions in which video-observations of their classroom
discussions were discussed. Analyses of post-observations of classroom talk revealed
that our intervention successfully promoted dialogic classroom talk in early childhood
teachers; teachers in the intervention condition used significantly more dialogic talk
moves compared to teachers in the comparison condition.

Multilevel analyses of children’s pre- and post-test scores showed that our
intervention had a significant and moderate to large effect on children’s oral
communicative competence. No effect on children’s subject-matter knowledge was
found. This study demonstrated that inducting children into dialogic classroom talk can contribute to the development of young children’s communicative abilities.

7.2 Limitations and directions for future research

Limitations

Although I consider myself to be a decent and ethical researcher, the work that I (together with my co-authors) have presented in this dissertation suffers from several limitations that need to be addressed.

First, in more general terms the quality of this dissertation might have unintentionally suffered from institutional pressure, such as the pressure to publish, career ambitions, and contracts (cf. Resnik, 2015). Although I worked hard to prevent external pressure from influencing the quality of this research, I believe this to be a serious threat to the quality and advancement of science in general, and possibly for this dissertation in particular. In order to minimize the possible effects of external pressure, I carefully and critically examined and discussed my work with colleagues, used a second rater to code the transcripts, and frequently discussed the importance of the quality of the work rather than the quantity in terms of the number of publications.

Second, although the empirical explorations showed that the intervention on dialogic classroom talk has a significant effect on young children’s oral communicative competence, no effect on children’s subject-matter knowledge was found. This is surprising, as previous research has shown that dialogic classroom talk is positively related to children’s performance in English literature (Nystrand & Gamoran, 1991), mathematics (O’Connor, Michaels, Chapin, & Harbaugh, 2017), and non-verbal reasoning (Wegerif et al., 1999). A first explanation might be that we used a subject-matter knowledge test with a relatively low internal consistency (i.e., omega = 0.71, GLB = 0.78, Cronbach’s alpha = 0.69) that was developed in the context of this
study. The reliability of this instrument is considered to be a serious limitation of the current study. It is, therefore, suggested that future studies should also use standardized instruments to measure what children learn from participating in dialogic classroom talk. Besides, future research in the field of classroom talk and dialogue should pay serious attention to the development of reliable and valid measurement tools. Next to this measurement issue, a second explanation might be related to the design of our study. Unfortunately, we were unable to control the equivalence of content and the length of the classroom conversations between intervention and comparison condition. O’Connor et al. (2017; see also, O’Connor, 2001) have argued that children who participate in dialogic classroom talk, often come up with unexpected questions or ideas that deepen their reasoning and shared thinking, and guide classroom conversations in new (sometimes unexpected) directions. Our classroom observations indicated that conversations in the comparison condition were more structured, overly teacher-steered, and covered most of the content from the teaching manual. A difference in subject-matter knowledge that was covered in both conditions, might explain why no effect on children’s subject-matter knowledge was found. No effect on children’s subject-matter knowledge indicates that children acquired subject-matter knowledge from highly structured, monologic classroom conversations, as well as dialogically organized classroom talk. This is something that should be researched in more detail in future studies. Based on the aforementioned, we argue that it might be interesting to explore the possibilities of controlling content between conditions, for example by building on the in vivo design used by O’Connor, Michaels, and Chapin (2015; see also, Koedinger, Aleven, Roll, & Baker, 2009). Furthermore, future research could also study delayed effects of dialogic classroom talk on children’s subject-matter knowledge using retention measurements.

Third, one of the aims of this dissertation was to study the effect of dialogic classroom talk on young children’s oral communicative competence. Oral communicative competence is considered a complex, and multifaceted competence
consisting of, for example, vocabulary knowledge, interaction skills (e.g., turn-taking, staying on topic, ending a conversation), and socio-cultural knowledge (e.g., socio-cultural norms of the target language) (Celce-Murcia, 2008). However, in our studies we only used one instrument – the Nijmegen Test for Pragmatics (Embrechts, Mugge, & van Bon, 2005) – to measure children’s oral communicative ability. Giving the complexity of this ability, it is suggested that future studies should take more elements of children’s oral communicative competence into account, such as listening skills, vocabulary knowledge, attitude (or disposition), and discourse competence. This might contribute to our understanding of how dialogic classroom talk contributes to the different facets of children’s oral communicative competence.

Fourth, innovating and changing classroom practice and interaction is challenging. Therefore, we have argued that in order to support teachers to move towards a dialogic classroom culture, intensive support inside the classroom is needed (cf. van der Veen, Dobber, & van Oers, 2016). In our studies, we used video-observations as a tool (cf. Kiemer, 2017) for teachers to support them to reflect on and change their classroom interactions. Our analyses showed that teachers were able to change their organization of classroom talk, as they used more dialogic talk moves over the course of our intervention. The intensive guidance might be an explanation for the positive effect of our intervention. However, the length of our six-week intervention was limited, giving teachers only a few possibilities to practice the use of the dialogic talk moves (see also, van der Pol, 2013). According to Slavin’s (2008) gold standard, interventions should have a duration of at least 12 weeks in order to be effective. A longer intervention will give teachers more possibilities to move towards a dialogic classroom culture, and become skillful orchestrators of productive classroom discussion. Furthermore, a longer intervention might support children to develop a dialogic disposition, and get used to the norms and expectations of a dialogic classroom culture and set of practices. Therefore, we suggest that future research should focus on prolonged dialogic classroom talk, using a longitudinal research design. The results of these longitudinal studies might add to the available
empirical evidence of the benefits of dialogic classroom talk. Furthermore, Mercer (2008) already argued that researchers should pay more attention to the temporal dimension of classroom talk. This could contribute to our understanding of whether children who participate in a dialogic classroom culture become more competent communicators and learn to think differently (i.e., develop advanced reasoning and communication skills).

**Directions for future research**

Following Bakhtin (1981), in this dissertation we have shown that a teacher’s dialogic style of conducting classroom dialogue can promote a transition from authoritative or monologic interaction to an internally persuasive dialogue, in which the tenability of propositions relating to practical or theoretical issues is based on the negotiation of meanings, carefully listening to each other, and engaging in argumentation. However, the outcomes of the studies in this dissertation also stipulate the need for further research (see also Howe, 2017; Liberali, 2017).

First, more conceptual work needs to be done in clarifying the assumptions that guide studies in the field of classroom talk and dialogue. Although many programs that support dialogic or productive classroom talk have at least some consensual core (Howe, 2017), Wegerif, Fujita, Doney, Linares, Richards, and van Rhyn (2017) have argued that the research field lacks a shared theoretical framework. According to Wegerif et al. (2017), this can be explained on the basis of the large number of theoretical traditions that are used in research on classroom talk. We argue that the field can profit from this diversity in theoretical perspectives, as long as researchers are transparent and clear about the theoretical perspective(s) that guide their work. For example, researchers should pay critical attention to their conceptions of dialogue, learning, assessment, and participation patterns in classroom talk that guide their work. This is all the more important in the analysis of observations of classroom talk (cf. Howe, 2017).
Second, as Howe and Abedin (2013) have pointed out, ‘dialogue’ is not necessarily restricted to direct verbal face-to-face exchanges (including paralinguistic and prosodic markers), but also can include distant textual sources, including different types of textual genres and tools, like ICT-mediated interactions (see also the reference to ‘polylogue’ in Dobber & van Oers, 2015; van der Veen, van Kruistem, & Michaels, 2015). Future research could explore how these different modalities might be used in the context of dialogic classroom talk and to what extent these modalities support teachers to move towards academically productive dialogue.

Third, more longitudinal research is needed on the organization of the developmental trajectory of dialogic thinking and communicating from the early years on. Presumably, the formation of dialogic thinking and oral communicative competence in all students requires an early start, in order to develop all dimensions of these abilities: verbal ability, cognitive strategies, critical attitude, resilience for critique, dealing with insecurity, the use of tools like theoretical models to regulate dialogues, and so on. Such multifaceted longitudinal research, starting in the preschool years, may produce deeper understanding of the complexities of dialogic talk and thinking and how it can be promoted on the basis of relevant evidence.

Fourth, next to longitudinal studies, more quantitative (quasi-experimental) research is needed to examine whether dialogic classroom talk is more beneficial for children’s learning and development than more traditional, monologic modes of organization (cf. Howe & Abedin, 2013). Thus far, most of the studies in the field of classroom talk and dialogue have been qualitative and small-scale. In this dissertation, we have made a modest contribution to this need for more quasi-experimental studies.

Fifth, the results of our empirical studies show our intervention and PDP to be effective in promoting dialogic classroom talk. A possible explanation for the effectiveness of our intervention is the intensive way in which we guided the teachers inside their classroom, using video-observations, and weekly reflection sessions. Reasoning from a policy perspective, we argue that future research should also focus
on the possibility of developing less time-consuming interventions, without compromising on quality and effectiveness. For example, web-based professional development environments might create possibilities for introducing teacher to dialogic talk moves, and supporting them to try them out in their own classroom. With web-based environments, it becomes possible to support teacher learning without needing the intensive guidance of a supervisor. Furthermore, online learning environments are easily accessible to a broad audience. In the context of science education, Sarah Michaels, Jean Moon, and Brian Reiser developed the Next Generation Science Exemplar Project (see www.ngsx.org). NGSX is a web-based PDP designed to engage teachers in working with the practices and core ideas in science, including productive classroom discussion. NGSX is a blended approach that supports face-to-face collaborative learning using web-based tools and interactivity, such as classroom video cases, text resources, presentations by experts, interactive activities that guide teacher to examine videos and transcripts, and posting of analytic reflections by participants (Moon, Passmore, Reiser, & Michaels, 2014). In future studies, the NGSX web-based PDP could be used as an example for developing less time-consuming interventions to promote dialogic classroom talk.

Finally, as also suggested by Berkovich (2016), further study of the effects of establishing a dialogic classroom culture (i.e., prolonged dialogic classroom talk) on the development of students’ identities, critical thinking, transformative learning and socio-cognitive development is needed. Especially, more research should be done on the interpersonal relationships between students and how these relationships influence classroom dialogues and their outcomes, both on an individual level, but most certainly on the collective level as well (Howe, 2017; Wegerif et al., 2017; see also, van der Wilt et al., 2016; 2017).
7.3 Implications for practice

The studies presented in this dissertation have several implications for educational practice. First, our conceptual explorations provide teachers and teacher educators with a heuristic to implement dialogic classroom talk. The different characteristics of dialogic classroom talk that we described in chapter 2 support teachers to move towards a dialogic classroom culture.

Second, the results of our empirical studies suggest that dialogic classroom talk can be implemented in early childhood education with very young children. Although changing classroom practice and interaction is challenging, our empirical studies show that our PDP supports teachers to make their classroom interaction more dialogic by using several talk moves that open-up the dialogue. It might be interesting for teachers and teacher educators to use particular elements of our PDP in their daily work. For example, teachers could use video-observations to gain insight into how they orchestrate classroom talk, as a tool for supporting them in practicing the use of different dialogic talk moves.

Third, we have shown that dialogic classroom talk in early childhood education is beneficial for the development of young children’s oral communicative competence. Given the importance of children’s oral language abilities for academic success, social acceptance, and learning and thinking, we suggest that teachers support these abilities from an early age. In dialogic classroom talk, teachers can support these abilities by giving children space to talk and think together, and by reflecting on their communicative performance.

Finally, in order to bridge the research-practice gap we have undertaken numerous activities to make our research accessible to teachers and educators. We have published articles in professional journals for teachers (see for example, van der Veen & van Oers, 2016; van der Veen, van Kruistum, & van Oers, 2016); we have given workshops at conferences that were attended by teachers and teacher educators; and
we aim to launch a website with information about our research and tools for teachers to support them in orchestrating dialogic classroom talk.

7.4 General conclusion

In the majority of classrooms, the interaction among teachers and children can still be characterized as predominantly monologic in nature; it is overly teacher-steered, and mainly focused on the recitation of knowledge, giving few opportunities for students to talk and think together. This is striking, as it is widely acknowledged that children’s educational experiences in early childhood education could have a lasting impact; high quality early childhood education is, for example, related to future (language) learning and development (see for example, Burchinal, Peisner-Feinberg, Pianta, & Howes, 2002; Stuhlman & Pianta, 2009). While educators may appreciate the value of dialogic talk, its actual occurrence in classroom practice is rare. In this dissertation, however, we have shown that it is possible to teach early childhood teachers to use several dialogic talk moves that support them in making their classroom interaction more dialogic. In evaluating our intervention and PDP, it appeared to be effective in promoting young children’s oral communicative competence.

Dialogic classroom talk is a powerful context in which (young) children simultaneously can learn to communicate more effectively (i.e., learning to talk), and learn about the world as they think together (i.e., talking to learn) (cf. Cazden, 2001; Wells, 2009). It is our hope that the studies presented in this dissertation contribute to the interesting research area of classroom dialogue, and inspire other researchers and practitioners to take up the challenge of building on the research presented in this dissertation.
References


