Advances in research on classroom dialogue: learning outcomes and assessments

CrossMark

ABSTRACT

The goal of this special issue is to examine how certain modes of classroom dialogue might contribute to students' learning outcomes. The articles in this special issue share the idea of classroom talk as a problem-oriented dialogue. In other words, an interactional configuration based on exchanges among students and teachers that go beyond the predominantly monologic approaches of classroom talk. In each of the contributions to this special issue, different types of learning outcomes were studied as a result of specific ways of orchestrating classroom dialogue. All in all, the studies in this special issue yield a picture of the field as a productive research area: they provide evidence for the plausibility of the assumption that dialogic orchestrations of classroom talk may produce various desired learning and developmental outcomes in students, depending on what outcomes we want to articulate, and how they are assessed. Although the studies in this special issue yield promising results for future improvements of classroom practice more (preferably longitudinal) research is required.

1. Introduction

For over four decades, the study of classroom dialogue has been an established research area in the educational sciences, linguistics and beyond (for an overview, see Howe & Abedin, 2013; Mercer & Dawes, 2014; Resnick, Asterhan, & Clarke, 2015; Walshaw & Anthony, 2008; Webb, 2009). Cazden (2001) referred to classroom dialogue as the language of learning, a productive context in which school learning can take place. As such, research on classroom dialogue focuses on identifying and promoting teacher-child or child-child interactions in school settings that might be most beneficial for children's learning and development. Nystrand and Gamoran (1991) have already shown in the early 1990s, that classroom dialogue characterized by open questions and discussions (i.e., dialogic classroom talk) is strongly related to children's learning. Surprisingly, still the majority of today's classroom talk is dominated by recitation (often in the form of Initiation-Response-Evaluation sequences); in which teachers ask closed questions and talk most of the time, giving little space for children's shared thinking and reasoning. Furthermore, Howe and Abedin (2013) concluded in their recent review on classroom dialogue that over the past decades we have come to know much more about "how classroom dialogue is organized than about whether certain modes of organization are more beneficial than others" (p. 325). There appears to be a lack of insight into the contribution of certain modes of classroom dialogue to children's learning outcomes. Therefore, we believe it is of eminent importance to further contribute to this area of research by providing additional empirical evidence on the relation between

classroom dialogue and children's learning and development. It is important to note here that we interpret children's learning and development in a broad sense, including: subject matter learning (for example mathematics learning, biology), language learning (for example oral communicative competence), identity formation, and learning to reason and think together.

In this special issue, we aim to contribute to the scientific understanding of classroom dialogue and their outcomes in the broad sense noted above, by presenting state of the art empirical research in the emerging research field of classroom dialogue. The overarching aim of the articles in this special issue is to explore the relation between certain modes of classroom dialogue and some predetermined learning outcomes, including ways of assessing the quality of these processes and outcomes. The contributions in this special issue all focus on different educational outcomes of classroom dialogue: from children's academic learning to the development of oral communicative competence; and from better thinking to improvements in children's mathematical skills and knowledge. As such, we aim to show how classroom dialogue can be the setting in which children's learning and development in different areas and domains can take place. It is not possible, however, to present a complete overview of all research conducted world-wide in this particular area. We invited authors working in the domain of classroom learning and classroom talk, and asked them to write about a topic in their research area that could contribute to a better understanding and empirical verification of either the orchestration of classroom dialogues related to learning outcomes, or of possible methods that could be used to measure

different types of learning outcomes of classroom dialogue.

We believe that both empirical studies on the relation between classroom dialogue and learning outcomes, and instrumentation to assess these outcomes in a valid and reliable manner are essential for the advancement of evidence-based academic understanding and the innovation of classroom practices. The first issue touches on the teachers' role in orchestrating classroom dialogue, as well as on the students' ways of participating in classroom conversations. The second issue (instrumentation) is indispensable for assessing the learning outcomes of classroom dialogue, both for theory testing purposes and for the legitimization of dialogic classroom practices. Evidently, we cannot make progress in research and the implementation of new ways of teaching without reliable and valid ways of assessing the learning outcomes.

The research presented in this special issue on classroom dialogue and its outcomes contributes to the international research agenda in several ways. Deliberately we started out from a broad methodological perspective on studying orchestration of classroom dialogue and its effects on, or relation to, learning and developmental outcomes, in order to promote the growth of understanding in this area. Given the complexity of studying classroom dialogue, we have welcomed contributions with a strong conceptual basis, and encouraged both quantitative (interventionist) studies, qualitative studies and studies that used a mixed-methods approach. Looking at the content of the articles, they can be grouped into two broad classes. The articles in the first group address issues of participation in and orchestration of classroom conversations, and their differential effects on students' learning and development, like identity formation (Kumpulainen & Rajala, 2017), the formation of argumentative skills (Forman, Ramirez-DelToro, Brown, & Passmore, 2017), formation of oral communicative competence (Van der Veen, de Mey, Van Kruistum, & Van Oers, 2017), and subject matter learning (O'Connor, Michaels, Chapin, & Harbaugh, 2017; Van der Veen et al., 2017). The second group of articles addresses issues of assessment of some of the aforementioned learning outcomes, such as methods for assessing oracy (Mercer, Warwick, & Ahmed, 2017), and group thinking (Wegerif et al., 2017).

All articles in this special issue share the idea of classroom dialogue as a mutual process based on exchanges among students and teachers that go beyond the monologic approach encountered in the majority of classrooms. The authors of the contributions to this special issue all view classroom talk as a social productive process in which classroom dialogue is linguistically and interactionally configured to support some kind of inquiry learning, shared thinking, and collective problem solving (see O'Connor & Michaels, 2007; Van der Veen, Van Kruistum, & Michaels, 2015; and many others like; Wells, 1999; Dobber & van Oers, 2015). This social productive process should always be seen as "an interactional achievement, guided by the teacher, linking academic content and students with one another" (Van der Veen, Van der Wilt, Van Kruistum, Van Oers, & Michaels, 2017, p. 3).

In the next section, we will briefly summarize the articles in these two groups of papers and discuss some potentials of these studies for the future research agenda in the area of classroom dialogue.

2. Contributions to this special issue

2.1. Ways of orchestrating classroom dialogue and their effects on learning outcomes

In the first paper, O'Connor, Michaels, Chapin and Harbaugh explore some of the effects of participation in whole-class mathematics discussions on the learning outcomes of different students. In contrast to most studies on the effects of cooperative learning and classroom dialogue, the authors have not just focused on aggregated classroom measures of learning outcomes, but have researched individual differences in participation in classroom dialogue to study differential learning outcomes (two sixth grade classrooms, $N = 44$). They compared the learning outcomes in mathematics classes of verbally participating students versus silent students who did not verbally contribute to the classroom conversation over multiple day units of instruction. For this study, they implemented 'academically productive talk' (APT) in one classroom and compared this class with a 'direct instruction condition'. This can be considered a strong quality of the study, as being silent as a student in a dialogic APT classroom (emphasizing frequent discussion) is probably differently motivated from being silent in a direct instruction classroom, where the pedagogical contract between teacher and students gives much less agency to students and their contributions. Moreover, the authors controlled for several factors, especially for content. O'Connor et al. conclude that academically productive talk is related to better learning outcomes, but that at the individual level the type of participation in classroom dialogue (i.e., silent vs. vocal) did not predict learning outcomes.

The study by Van der Veen, de Mey, Van Kruistum and Van Oers examined whether a certain mode of classroom dialogue in which children are given space to talk and think together - referred to as productive classroom talk - is more beneficial for the development of young children's oral communicative competence compared to classroom talk that is overly teacher-steered and based on recitation (as in largely monologic or traditional classroom talk). This study is one of the few studies in the research field of classroom dialogue that uses a quasi-experimental design to verify whether a specific mode of organization of classroom dialogue is more beneficial than another mode (cf. Howe & Abedin, 2013). Van der Veen et al. show with their study that productive classroom dialogue has a moderate to large effect on the development of young children's oral language abilities, even after controlling for sex, age, pre-test scores and home language. Given the possibilities of productive classroom dialogue for the improvement of children's oral communicative abilities, there is a strong need for more research on the processes that contribute to the effectiveness of productive classroom talk. Furthermore, Van der Veen et al. suggest that future research should also explore whether the effect of productive or dialogic classroom talk sustains over time.

Kumpulainen and Rajala present a qualitative study in which they explore how dialogic classroom talk might give primary school children (aged 9—10) opportunities for identity negotiation. Specifically, they aim to show how dialogic teaching in the context of science education might support and challenge students to recognize, manage, and negotiate their identity as science learners. Kumpulainen and Rajala point to the complexity of dialogic teaching in creating equal opportunities for the learning of science of all students. Equitable inclusion of students depends largely on the abilities of teachers to invite and encourage all students to participate in classroom dialogue (see also O'Connor et al., 2017) and teachers' sensitive guidance during classroom talk. Kumpulainen and Rajala conclude their paper by stating that classroom dialogue could be more inclusive through the use of negotiable ground rules for classroom talk and by allowing students to move between peripheral and central participation (cf. Lave & Wenger, 1991).

In the study of Forman, Ramirez-DelToro, Brown and Passmore, the authors describe a biology classroom in which the teacher promoted the emulation of academic communities by employing discursive strategies that encourage argumentation. In order to study the realization of such a community in a 9-week course on evolutionary biology, the authors focus on the teacher's strategies of orchestrating classroom dialogue in such a way that the students