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Explaining the dialogic processes of teaching and learning: The value and potential of sociocultural theory

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ABSTRACT

Within the broad field of research on learning, culture and social interaction, sociocultural theory is now commonly used as an explanatory conceptual framework. In this article we begin by setting out the essential elements of this theory as it applies to a specific area of enquiry in which we have been involved, which is aimed at understanding the educational functions of classroom talk. In doing so, we will discuss some key concepts generated by the theory. We then review empirical research on talk and learning which has been inspired and informed by a sociocultural perspective, and go on to consider the educational implications of its findings. Finally, we consider how research on the educational functions of classroom talk might be developed, both theoretically and empirically, by using a sociocultural framework to link it with other lines of enquiry into learning and cognitive development.

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1. Introduction

Our aim in this article is to describe and discuss one area of enquiry within the broad field of research into learning, culture and social interaction: the study of the educational functions of talk in the classroom. Our intention in doing so is, in part, to illustrate how the pursuit of applied educational research, concerned with improving the quality of the processes of teaching and learning, can interact with the development of theory. In this way we would hope to illustrate the scope of this new journal, which will welcome both empirical and theoretical contributions. The theory we will focus on – sociocultural theory – provides the main explanatory framework for our own research; but it has in recent times become increasingly influential within developmental psychology and educational research as a whole. Built from the foundations of Vygotsky's work (e.g. Vygotsky, 1978), it is also known as 'cultural-historical activity theory' (van Oers, Elbers, van der Veer, & Wardekker, 2008). As protagonists of this theory, we would never argue against the study of individual processes of thinking and learning, but we believe that the relationship between social activity and individual thinking is a vital, distinctive characteristic of human cognition, and one which underpins cognitive development. As Säljö (2009) has put it, a major interest from a sociocultural perspective is in how human skills are appropriated by individuals. This implies that children's intellectual achievements and failures are not just dependent upon their own efforts or discoveries, but the product of culturally-situated forms of social interaction. Knowledge is not just an individual possession but also the creation and shared property of members of communities, who use 'cultural tools' (including spoken and written language), relationships and institutions (such as schools) for that purpose. From this sociocultural perspective, the nature of thinking, learning and development can only be understood by taking account of the collective, historical nature of human life. Daniels (2001, 2008), Wertsch (1991a,b), Wells and Claxton (2002) and others have provided excellent accounts of the nature and origins of this theory, and how it relates to pedagogical theory and educational enquiry. In this article, our focus is much more specific: on the study of talk and the processes of teaching and learning as an applied field of enquiry, aimed at improving the quality of classroom education.

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Vygotsky (1978, p. 88) argued that 'human learning presupposes a specific social nature and a process by which children grow into the intellectual life of those around them'. Although his interest was essentially in adult–child interactions, this claim draws attention not only to the interactions between students and teachers, but also those amongst students. Vygotsky's account of development has often been contrasted with that of Piaget; but as Smith, Dockrell, and Tomlinson (1996), Shayer (2003) and others have argued, there are good reasons to treat them as complementary rather than contradictory. While Piaget placed much less emphasis on the functions of language, he (Piaget, 1932, 1967) did argue that interaction amongst peers could be a powerful influence on conceptual change. If contrasting views were expressed, he suggested, the social dynamics of the situation would create a pressure towards resolution of differences. As he put it, 'Criticism is born of discussion and discussion is only possible amongst equals' (Piaget, 1932, p. 409). This point of view has been elaborated by Piaget's followers, such as Perret-Clermont (1980) and Doise and Mugny (1984), primarily through the concept of *socio-cognitive conflict*, which can be regarded as a bridge between Piagetian cognitivism and Vygotskian socioculturalism in the study of conceptual change. Brought into the framework of sociocultural theory, we suggest this concept has great potential value, especially for the analysis of collaborative learning in the classroom.

2. The role of talk in the classroom

Vygotsky (1962, 1978) argued that the acquisition and use of language transforms children's thinking. He described language as both a cultural tool (for the development and sharing of knowledge amongst members of a community or society) and as a psychological tool (for structuring the processes and content of individual thought). He also proposed that there is a close relationship between these two kinds of use, which can be summed up in the claim that 'intermental' (social, interactional) activity forges some of the most important 'intramental' (individual, cognitive) capabilities, with children's involvement in joint activities generating new understandings and ways of thinking—not only for them, but also sometimes for those with whom they are interacting. From a sociocultural perspective, then, language acquisition and its use are seen as having a profound effect on both *collective* thinking and *individual* thinking. Indeed, one of the distinctive strengths of sociocultural theory is that it explains not only how individuals learn from interaction with others, but also how collective understanding is created from interactions amongst individuals. It is not surprising, then, that sociocultural theory has had a strong influence on research into both teacher–student interaction and collaborative learning amongst students. We will discuss each of these in turn.

3. Teacher–student talk

Sociocultural pioneers like Barnes (1976) and Cazden (1972) argued years ago that if we want to improve students' engagement and learning outcomes, the role of talk in classrooms needs to be better understood and reappraised. There is now comprehensive research evidence to support their views that talk amongst teachers and students, if of the right quality, can be a powerful motor for the development of reasoning and the improvement of academic performance. Such research has mainly been motivated by concerns about the quality of habitual teacher–student interaction. In whole-class settings, especially in secondary education, teacher–student interaction still tends to be dominated by teacher monologues and exchanges between teachers and students in which teachers use 'closed' questions to seek brief, accurate confirmation that selected students know the 'right answers'. For example, on the basis of their observational research in English primary schools in the early years of the 21st century, Smith, Hardman, Wall and Mroz (2004, p. 14) report that 'In the whole class sections of literacy and numeracy lessons most of the questions asked were of a low cognitive level designed to funnel students' responses towards a required answer.'

From Smith et al.'s point of view, it might seem that teachers' very frequent use of questions should be discouraged, as indeed sociocultural researchers have done in the past (Wood, 1992). But recent research offers a more nuanced understanding of how teachers' questions can and do function. Reviewing an international range of studies on literacy teaching, Wolf, Crosson, and Resnick (2006) conclude that when teachers merely check students' comprehension by seeking yes/no answers, or frame the question in such a way that students only have to complete the teacher's incomplete sentence, this does not help develop students' high-level reading skills. But Wolf, Crosson and Resnick also conclude that when teachers use questions to encourage students to put the main idea in their own words, and press them to elaborate these ideas (for example by asking 'How did you know that?' 'Why?'), this develops students' reading comprehension skills. So while teachers' questions can just require students to guess what answer is in the teacher's mind, they can also serve other very useful functions for guiding students' learning and their own use of language as a tool for reasoning. Sociocultural research has thus helped overcome simplistic conceptions of the relationship between the *forms* and structures of classroom discourse and its educational *functions*.

Research has also shown that when teachers use certain interactional strategies more often, students' participation in class and their educational outcomes are likely to improve (e.g. Brown & Palincsar, 1989; Chinn, Anderson, & Waggoner, 2001; Dawes, 2004; Mercer & Littleton, 2007). In a systematic review of 15 studies of talk in mathematics classrooms, Kyriacou and Issitt (2008) found that good learning outcomes result when teachers use questions not just to seek right answers, but also to elicit reasons and explanations. Rojas-Drummond and Mercer (2004), comparing groups of Mexican teachers whose students achieved good learning outcomes in mathematics and literacy with groups who were less successful, found that the former used question-and-answer sequences not just to test knowledge, but also to guide the development of students' understanding; the less successful teachers relied on more traditional, closed forms of questioning. Alexander (2001) suggests an association between Russian teachers' common use of questions to seek extended contributions from students in mathematics lessons and the high levels of attainment that their students achieve in international comparisons. In a meta-analysis of experimental programmes for teaching science, Murphy (2007) found that the positive effects were greatest when hands-on activity was combined with some form of relevant discussion.

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