Oxford Review of Education
Publication details, including instructions for authors and subscription information:
http://www.tandfonline.com/loi/core20

The study of talk between teachers and students, from the 1970s until the 2010s

Neil Mercer[a] & Lyn Dawes[a]
[a] University of Cambridge, UK
Published online: 31 Jul 2014.

To cite this article: Neil Mercer & Lyn Dawes (2014) The study of talk between teachers and students, from the 1970s until the 2010s, Oxford Review of Education, 40:4, 430-445, DOI: 10.1080/03054985.2014.934087

To link to this article: http://dx.doi.org/10.1080/03054985.2014.934087

Oxford Review of Education, 2014
Vol. 40, No. 4, 430–445, http://dx.doi.org/10.1080/03054985.2014.934087

The study of talk between teachers and students, from the 1970s until the 2010s

Neil Mercer* and Lyn Dawes
University of Cambridge, UK

The close study of classroom talk has been an active field of research since the 1970s, when John Furlong made his significant contribution. Focusing particularly on research into teacher–student interactions, we will review the development of this field from the 1970s until the present, considering what has been learned and the educational implications of the results. We also discuss the impact of the findings of this research on teacher education, educational policy and classroom practice.

Keywords: *talk; classrooms; teaching; analysis; teacher education*

Introduction

In this paper, we review the development of research into talk in the classroom, from the 1970s to today, with a particular focus on the study of teacher–student interaction. When John Furlong's book with Tony Edwards, *The Language of Teaching* (Edwards & Furlong, 1978), was published, the close study of classroom talk was quite a recent development within educational research. As one of those authors commented some years later, in an influential methodological handbook on analysing classroom talk: 'To find verbatim transcripts of classroom talk before 1970 is difficult' (Edwards & Westgate, 1994, p. 1). There had already been some significant interest in specific features of classroom talk, such as teachers' use of questions, mainly using the quantitative survey method of 'systematic observation' which did not involve recording and transcribing talk. Instead, trained observers noted the incidence of target features as they sat in classrooms, observing interactions in real time (Amidon & Hunter, 1967; Flanders, 1970). Such research gave us memorable insights such as Flanders's 'two-thirds rule', which says: in a lesson

*Corresponding author. University of Cambridge Faculty of Education, 184 Hills Road, Cambridge CB2 8PQ, UK. Email: nmm31@cam.ac.uk

someone is usually talking for about two-thirds of the time, and two-thirds of that talk is usually by the teacher. Using their quantitative findings, researchers could look for associations between the relative incidence of particular features and other educational variables, such as learning outcomes. That style of research into talk continued through the 1970s and beyond (for example, in the *Oracle Project* research: Galton, Hargreaves, Comber, Pell, & Wall, 1999; Galton, Simon, & Croll, 1980) and its value is shown by the fact that it is still employed today as one of several distinctive approaches to the study of classroom talk (Mercer, 2009). However, it is not suitable for examining how the structure and content of talk develops through lessons, or how specific participants contribute to the development of shared understanding. That requires a researcher having access to an audio (or, ideally, a video) recording of the lesson (or series of lessons) which can be transcribed and reviewed for careful consideration. With the increased availability of such technology, and drawing on methods developed by anthropologists and sociolinguists, it became common to employ a qualitative approach to analysing classroom talk, with selected extracts from transcripts being used to illustrate and support analytic claims in research publications.

During the 1970s and early 1980s, an interest in the social and cognitive functions of language in social interactions was growing generally amongst psychologists, sociologists, anthropologists and linguists. This initiated the emergence of a new kind of sociology, ethnomethodology, which focused on social interaction at the micro-level and generated a new and very distinctive approach to analysing talk: *conversation analysis* (Garfinkel, 1974). Though that approach was (and still is) used only very rarely in classroom research, the ethnomethodological concern with talk as social action had a wider influence on educational research. Vygotsky's work, with its emphasis on the importance of spoken dialogue for children's cognitive development, had also recently become more available through translation and interpretation (e.g. Vygotsky, 1962, 1978). His conception of the special relationship between language and thinking began to have a significant influence on educational research, and not just amongst psychologists (Britton, 1978). Moreover, around that time researchers from varied disciplinary backgrounds used empirical studies to claim that the nature and quality of children's involvement in spoken dialogue could have an important effect on their educational achievement and participation (Bernstein, 1975; Heath, 1983; Wells, 1978). And through the efforts of pioneers in the field, such as Barnes, Britton and Rosen (1969) in the UK and Cazden (1972) and colleagues in the USA, the relevance of studying teacher–student talk for understanding how education happened in classrooms became more widely accepted by teachers and those working in teacher education. However, at that time the initial training of teachers did not typically involve awareness-raising about classroom talk, its importance for children's development, or how it might be employed most effectively.

Understanding the form and functions of classroom talk

The new interdisciplinary interest in spoken language led to some seminal contributions to our understanding of the structure and functions of classroom talk. A good example is the identification of the most common, minimal unit of interactional exchange between a teacher and a student. This exchange unit was given the acronym IRF (Initiation-Response-Follow-up: often modified to Initiation-Response-Feedback by British educational researchers) by the British linguists Sinclair and Coulthard (1975) and IRE (Initiation-Response-Evaluation) by the American sociologist Mehan (1979). This building-block of the most conventional kind of classroom talk cannot easily be ignored by any observer of classroom life, once it has been noticed. As a vehicle for 'closed' questioning, it has been observed as a common feature of life in English primary classrooms even in recent times (Hardman, Smith, & Wall, 2003). An archetypal example is:

> Teacher: What is the capital of Peru? (*Initiation*)
> Student: Lima (*Response*)
> Teacher: Yes, well done (*Follow-up*/*Feedback*/*Evaluation*).

Sinclair and Coulthard were not motivated by a wish to improve classroom education: they used classroom talk as data for exploring the textual structure of interactive, spoken language. They combined the 'exchange' unit with other units such as 'act' and 'event' to construct a hierarchical system for describing the structure of classroom talk, which revealed its specific, cohesive nature as a distinctive language genre. Mehan's more sociological interest of the IRE unit was focused on the social order of the classroom, including its power relations, and demonstrated how talk functioned to sustain that order. Edwards and Furlong's research took a similar sociological perspective. As the sociologist of education Banks (1978) commented at that time, research such as that by Mehan, and Edwards and Furlong, was pioneering the task of 'building bridges' between sociological understanding of society as a whole (the macro-level of social structure) and specific social events (the micro-structure).

But while gaining a heightened perception of the nature and structure of interactional talk might seem obviously useful for a social scientist, was it also useful for teachers? This was one of the issues that Edwards and Furlong addressed in their book. They wrote '… can it be argued that teachers need to discover a situation which they cope with in every working day?' (p. 2) They claimed that it is indeed useful for teachers to gain some insight into the nature of classroom talk, and they explained why:

> The justification for this claim does not come from assuming some ultimate reality which only the expert social scientist is equipped to penetrate. It arises from the extreme difficulty of seeing what is familiar and recurrent. If the immediacy and pace of classroom events make it essential for teachers to make most of their work a matter of routine, then what is routine may have to be 'forced out its usual semi-consciousness' if it to be reflected upon at all. (Edwards & Furlong, 1978, p. 2)

We can see in that statement the seeds of the development through the 1980s of what has been called 'the reflective practice movement' in education (Ziechner, 1994). Though claims about the value of reflection for improving practice can be traced back to Dewey (1933), it became a much more explicit and widespread focus of interest. Edwards and Furlong's research, as described in their book, was also important for bridging the gap between teachers and researchers in another way—by involving teachers as participants in the research, rather than as objects of the attention of detached observers. Their example encouraged many of us to try to live up to the expectation that we should not do research *on* teachers, but *with* teachers.

The empirical study of teaching talk that Edwards and Furlong report in their book was carried out in a large comprehensive school in Manchester. One of its aims was, as they put it, 'to describe a kind of teaching of which very little is known' (p. 7): that which took place in mixed ability secondary school classes. They were able to show that, in many ways, talk in these classrooms corresponded to the common patterns of talk in classrooms everywhere. Moreover, they showed how one signficant aspect of a teacher's role is to monitor and manage how talk happens in their classroom. They described how the lessons they observed tended to consist of 'stages with perhaps some sharply differing rules about the appropriate quantity, distribution and forms of talk, and teachers have to provide the relevant "stage directions"' (p. 21). The sociolinguist Stubbs (1983) had identified six categories of such directing comments made by teachers, which he called *metastatements*. Edwards and Furlong provided examples of each of these categories from their observational data, as shown in Table 1.

Throughout the chapters of the book, Edwards and Furlong also provide detailed illustrations and analyses of the kinds of talk they observed. Almost all of it represented a highly authoritative style of 'transmission teaching'. As they conclude in the final chapter, 'Differences in the surface style of individual teachers seem to leave unaltered a basic structure of centrally controlled interactions and centrally managed meanings' (p. 147). They did not criticise the teachers they had observed for doing this, but rather explained what they saw as a '... coping strategy—a way of working developed to reconcile the difficult problems of maintaining order, communicating information, and providing at least some degree of pupil autonomy' (p. 149). They explained how classroom talk enabled the social and intellectual life of classrooms to happen, but they did not propose alternative regimes of classroom interaction. Nevertheless, implicit in their text is the idea that, as an educational tool, talk was commonly not being used to its full potential, because its use was so constrained by the dominant cultural norms of school; and that the dominant patterns of classroom talk limited the extent to which pupils were able to actively construct their own knowledge and understanding. Thus they conclude the book by saying:

> Close attention to the interpretative schemes which teachers and pupils seem to be using to construct and assign meanings makes it possible to identify the extent to which different teaching strategies reflect and reproduce less hierarchical relationships, and less sharply differentiated boundaries between teachers' and pupils' knowledge. (p. 155)

Table 1. Types of metastatements made by teachers (from Edwards & Furlong, 1978, p. 21)

(1) *Attracting attention*	'Girls, it might be might be a nasty rumour, but I've been told you're doing nothing.'
(2) *Controlling the amount and distribution of talk*	'You're making too much noise at this table, you should be working.'
(3) *Specifying the topic*	'We're going to look at the people on a small island, how they solve the problems of shelter, food, clothing, law and order – you know, the problems we looked at before half term.'
(4) *Checking or confirming understanding*	Is there anyone who doesn't know how to work out a map now? Nobody? Well, that's great, we've done well this morning.'
(5) *Correcting and 'editing' what is said*	'Why will the eagle go for that one? ''Cos it can't fly.' 'Well, no, it can fly – that's not the reason.' ''Cos it's white.' 'Yes, because it's white. Why will it go for it because it's white?' 'It can see it better.' 'That's right, in that environment the other one is better *adapted*, it's – what's the word?' 'Camouflaged.'
(6) *Summarizing*	'So from a story from long ago we've used that story to work out how people thought about themselves, how they lived.'

The influence of research on educational policy

By the mid-1980s, stimulated by the work described above, the study of classroom talk had gained wide interdisciplinary and international interest. Psychologists, sociolinguists and anthropologists, as well as sociologists and English specialists, had become involved (e.g. Edwards & Mercer, 1987/2012; Green & Wallat, 1981; Hargreaves, 1984; Mercer & Edwards, 1981; Spindler, 1982). The research had promoted a growing awareness amongst policy makers (at least in some countries) of the educational importance of the study of classroom talk. This had first been apparent in the Bullock Report (1975) commissioned by the Westminster government, which said:

> We need to begin examining the nature of the language experience in the dialogue between teacher and class … By its very nature a lesson is a verbal encounter through which the teacher draws information from the class, elaborates and generalises it, and produces a synthesis. His [sic] skill is in selecting, improving and generally orchestrating the exchange. (p. 141)

Bullock's and other official endorsements of the value of enquiry into classroom talk (for example ILEA, 1984) encouraged teachers to appraise the ways they

interacted with students. Whether intended or not, research on classroom talk had stimulated an initiative for change, with the expectation that encouraging different patterns of classroom interaction from those usually observed might enable new and better ways of teaching and learning to emerge.

In England, government interest in the educational value of talk in the classroom probably reached its highest level in the 1980s, as represented by the establishment in 1987 of the National Oracy Project (which included England and Wales) by the newly formed National Curriculum Council (Norman, 1992). It ran until the end of its dissemination phase in 1993. The six aims of the project included 'to enhance the role of speech in the learning processes 5–16 by encouraging active learning' and 'to enhance teachers' skills and practice'. The term 'oracy' had been coined by one of the British pioneers of the study of classroom talk, Wilkinson (1970), as the analogue of literacy and numeracy. The project brought together teachers, teacher educators, researchers and policy makers: pupils themselves took an active role. Its main aim was to raise awareness about talk and its educational value, and so change its status as the 'poor relation' of reading and writing in educational culture; but it also encouraged the celebration of children's talk, in all its diversity. It generated much enthusiasm and activity in schools. In our experience, those who were involved invariably recall it today in very positive terms.

However, the impact of the National Oracy Project on educational policy and practice was, to a considerable extent, undermined by the election of a Conservative government in 1992 with a 'back to basics' agenda for education. From that time, oracy again became the neglected sibling of literacy and numeracy. Regarding pedagogy, the emphasis was moved strongly away from encouraging variety in the dialogue between teachers and students, and back towards a more traditional, transmissional style of teaching (Cox, 1991). But research into classroom talk continued.

The development of analytic frameworks

Building on the knowledge gained from the early studies of teacher–student talk, the initial insightful ideas of the 1970s were developed into more systematic analytic approaches and explanatory frameworks by later researchers (Edwards & Westgate, 1994). Such work continued through the 1990s, particularly from the perspective of linguistic ethnography (see for example Creese, 2008; Gee & Green, 1998).

Following the identification of the IRF/IRE exchange and its association with the interrogation of a student by a teacher, as illustrated in the archetypal example included earlier, it became common amongst educational researchers to criticise teachers for their extensive and habitual use of such exchanges. Because IRFs were so commonly used to ask students 'closed questions', to which the teacher knew the only permissibly correct answer, it tended to be assumed that this

linguistic form had a necessary association with that function in a dialogue. This led to suggestions during the 1980s and 90s that teachers should try to avoid setting up IRFs, and minimise their use of questions (Wood, 1992). However, further careful analysis, for example by Wells (1999), showed that it is necessary to distinguish between form and function when analysing teacher–student exchanges and evaluating questions in teacher–pupil dialogue. As Wells (1999) in particular demonstrated, the IRF structure need not be tied to the use of closed questions. While such questioning certainly can require a student to guess what answer is in the teacher's mind, that is merely one possible function of the interchange. Teachers' questions can also serve other purposes, some of which may be more useful for assisting children's learning and developing their use of language as a tool for reasoning. In addition to their obvious behaviour management function —checking who is attending—teachers' questions can:

> encourage children to make explicit their thoughts, reasons and knowledge and share them with the class;
>
> 'model' useful ways of using language that children can appropriate for use themselves, in peer group discussions and other settings (such as asking for relevant information possessed only by others, or asking 'why' questions to elicit reasons);
>
> provide opportunities for children to make longer contributions in which they express their current state of understanding, articulate ideas and reveal problems they are encountering. (Mercer & Littleton, 2007, p. 36)

The importance of context

One reason why the qualitative analysis of talk became more popular than quantitative coding approaches during the 1980s and 1990s was a wider appreciation of the ways that the *context* of any conversation can affect its meaning for interlocutors (Edwards & Westgate, 1994). This means recognising not only the relevance of the physical setting and any artefacts shared by a teacher and students, but also the *common knowledge* that has been generated through the history of talk and shared activity of a teacher and their class (Edwards & Mercer, 1987/2012). The nature and extent of the prior knowledge shared by a teacher and students at the time the question is asked can affect the meaning and function of a question very significantly. 'Why does the moon appear to change shape?' would have a different educational function if asked by a teacher on first meeting a new class than if asked of the class after several lessons about the solar system. The former could represent an attempt by the teacher to see what prior knowledge the students were bringing to a new topic, while the latter could represent an attempt to evaluate the effectiveness of teaching. Such research highlights the methodological importance of studying classroom education as a journey through time for those involved, rather than a discrete series of teaching and learning events (Mercer, 2008).

This kind of realisation stimulated the development of new research methods. For example, Nystrand and colleagues in the USA devised a method they call *event*

history analysis to study the antecedents and consequences of teachers' and students' questions as 'moves' in the flow of classroom discourse (Nystrand, 1997; Nystrand, Wu, Gamorgan, Zeiser, & Long, 2003). One of their special interests has been in episodes of classroom dialogue in which students took an active and sustained part in discussing ideas (as opposed to the episodes in which teachers did most of the talking and students made only brief contributions—which they, like so many other researchers, had observed tended to be the norm). They called these periods of active discussion *dialogic spells*. Their analysis shows how teachers can increase the likelihood of such spells through the use of certain strategies. These include actively welcoming and soliciting students' ideas; following up students' responses in their own remarks; asking more 'open' questions; and deliberately refraining from responding to a student's contribution with an evaluative feedback comment (and perhaps encouraging another student to offer an evaluative follow-up instead).

Dialogic teaching

The work by Nystrand and colleagues also represents the growth of interest since the beginning of the 21st century in *dialogic teaching*—a term introduced and elaborated by Alexander (2006), and emerging from his cross-cultural analysis of primary school classrooms in five countries: England, France, India, Russia and the USA (Alexander, 2001). Perhaps because the forms and structures of classroom talk had become well defined through research in the 1970s and 80s, researchers began to use this descriptive understanding to focus on ways of maximising the positive effects of teacher–student interaction. The aim of research on dialogic teaching has been of this kind, aiming to identify, and promote, those forms of interaction which have the most beneficial educational outcomes. At its heart is the assertion that children's learning and intellectual development will be best assisted if, for at least some of the time they are in class, they are encouraged and enabled to take an active and proportionally significant role in classroom talk. That is, dialogic teaching is that in which both teachers and pupils make substantial and significant contributions and through which pupils' thinking on a given idea or theme is helped to move forward. Its specification is intended to highlight ways that teachers can encourage students to use spoken language to explore and extend their own understanding. Alexander suggests that dialogic teaching is represented by certain features of classroom interaction:

- questions are structured so as to provoke thoughtful answers […];
- answers provoke further questions and are seen as the building blocks of dialogue rather than its terminal point;
- individual teacher–pupil and pupil–pupil exchanges are chained into coherent lines of enquiry rather than left stranded and disconnected … (Alexander, 2006, p. 32)

Another major contribution to the study of dialogic teaching was made by the British researcher Scott, who with his Brazilian colleague Mortimer, recorded and analysed lessons in secondary science classrooms (Mortimer & Scott, 2003). Mortimer and Scott classified interaction between a teacher and students along two dimensions: *interactive-non-interactive* and *authoritative-dialogic*. As shown in Table 2 (adapted from Scott & Asoko, 2006), this generates four types of 'communicative approach':

A. Interactive/dialogic: teacher and students consider a range of ideas.
B. Non-interactive/dialogic: teacher reviews different points of view.
C. Interactive/authoritative: teacher focuses on one specific point of view and leads students through a question and answer routine with the aim of establishing and consolidating that point of view.
D. Non-interactive/authoritative: teacher presents a specific point of view.

According to this analysis, a dialogic teaching approach involves the teacher asking students for their points of view and explicitly taking account of what is said, for example by asking for further elaboration or by asking students to compare their ideas. Any specific lesson or series of teaching sessions might include episodes of each of the four communicative approaches, and be considered dialogic overall. Indeed episodes of authoritative talk and non-interactive review are essential if students are to be offered access to knowledge and information. There is no implication in this analysis that any one approach is better, in educational terms, than another: it is the strategic balance that is important. For students to learn effectively, there will be times when they should sit quietly and listen to an authoritative explanation; but they are likely to develop a deeper understanding of a topic if they also have opportunities to express their own ideas, hypothesise, hear the thoughts of their fellow students, argue, reason and gain feedback from their teacher when 'thinking aloud' through a line of reasoning (Dawes, 2004; Myhill, Jones, & Hopper, 2005).

The current state of research

Now that around 40 years have passed since those first explorations into the nature and functions of teacher–student talk, we can ask: where are we now? The field is

Table 2. Communicative approaches (adapted from Scott & Asoko, 2006)

	Interactive	**Non-Interactive**
Dialogic	A Interactive/Dialogic	B Non-Interactive/Dialogic
Authoritative	C Interactive/Authoritative	D Non-Interactive/Authoritative

still one of interdisciplinary endeavour, in which a range of approaches and methodologies are in use (see for example Mercer & Hodgkinson, 2008). One important methodological development has been the creation of specialised software for enabling both the qualitative and quantitative analysis of talk. Most educational researchers will be familiar with software like *nVivo,* which is used for the systematic storing, coding and analysis of data from observational research (and not just that concerned with classroom talk). Some talk researchers have also taken up the use of software designed by, and for, linguists and lexicographers. Research in linguistics, in recent decades, has been revolutionised by the development of computerised methods for analysing large electronic databases of written texts, which can include transcriptions of talk. Software packages known as 'concordancers' enable any text file to be scanned easily for all instances of particular target words. Commonly used examples of such software are Monoconc, Wordsmith, and Conc 1.71. An attractive feature of the analysis they enable is that words can be identified as separate lexical items and as parts of a continuous text. Not only can the relative frequency of occurrence of particular words be measured, and the speakers who used them be identified, but the analysis can also indicate which words tend to occur together, and so help reveal the way words gather meanings by 'the company they keep'. The results of such searches can be presented as tabular *concordances*. Once recorded talk has been transcribed into a word file, a researcher can move almost instantly between occurrences of particular words and the whole transcription. This enables particular words of special interest to be 'hunted' in the data, and their relative incidence and form of use in particular contexts to be compared. The basic data for this kind of analysis, throughout, remains the whole transcription. By integrating this method with other methods, the analysis can be both qualitative (targeting particular interactions or extended episodes) and quantitative (comparing the relative incidence of 'key words', or of types of interaction as might a systematic observer). Initial exploratory work on particular short texts (or text extracts) can be used to generate hypotheses, which can then be tested systematically on a large text or series of related texts. For example, a researcher may want to see if a technical term introduced by a teacher is taken up by students later in a lesson, perhaps in their group-based activity. By locating all instances of the term in the transcription file, the ways it is used by teachers and students can then be considered (see, for example, Monaghan, 1999; Wegerif & Mercer, 1997).

In terms of outcomes of all these years of endeavour, there is quite a high degree of consensus amongst researchers about the educational implications of the results of this activity. The results of many years of research strongly suggest that when teachers make regular use of certain dialogue strategies, students' participation in class and their educational outcomes are likely to benefit (e.g. Brown & Palincsar, 1989; Chinn, Anderson, & Wagner, 2001; Mercer & Littleton, 2007). Rojas-Drummond and Mercer (2004), comparing groups of Mexican teachers whose students achieved good learning outcomes in mathematics and literacy with those who did not, 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 forms of questioning. In a systematic review of 15 studies of talk in mathematics classrooms, Kyriacou and Issitt (2008) found better learning outcomes were associated with teachers using questions not just to elicit right answers, but to seek reasons and explanations.

However, like many other areas of educational research, critics can point to the absence of many large-scale studies, and even fewer using randomised control designs, to support these educational implications. Howe and Abedin (2013) have carried out a systematic review of four decades of research into classroom dialogue, in which they review 225 studies published between 1972 and 2011, and covering the full range of compulsory schooling. The scope of their review was quite broad, in that they used a definition of dialogue which is more or less synonymous with 'conversation', meaning 'all verbal exchanges where one individual addresses another individual or individuals and at least one addressed individual replies' (Howe & Abedin, 2013, p. 325), though they only included studies published in English. There was no restriction on the methods used, so both quantitative studies based on coded observations and qualitative studies based on the close analysis of transcripts were eligible, with rough equivalence between the two. Interestingly, they note a large increase in the number of studies published after 2001, with proportionally many more from non-English speaking countries (though published in English) in the last decade. These increases may be due to the increased accessibility of research electronically and the growing expectation of researchers internationally that they should publish in English. However, such factors do not explain why the UK, rather than the USA, became the dominant contributor to such research in that period, despite some major contributors to the field being located in the USA (for example Bloome, Carter, Christian, Otto, & Shuart-Faris, 2005; Dixon & Green, 2005; Heath, 2012; Wells & Ball, 2008). The majority of the studies in their review focused on teacher–student interaction, though some were concerned with students working in groups without a teacher (which is not the focus of our discussion here). Some of the research had a very specific focus, so that, as they note, 'In general, research concerned with student gender, attainment and ethnicity has focused upon which students respond to teachers and what form of feedback they receive' (p. 330).

They conclude that 'One key message is that much more is known about how classroom dialogue is organized than about whether certain modes of organization are more beneficial than others' (p. 325). They also comment:

> Looking at the dates when the relevant studies were published, it is likely that much the same conclusion would have been reached about the basic patterns [of participation in classroom talk] had our review taken place 20 years earlier, and it is of course interesting to see that so little has changed. It is also re-assuring to find results replicated. However, given an essentially static situation over 40 years ... arguably the characterization of dialogic patterns should not be accorded high priority when it comes to future research. (Howe & Abedin, 2013, p. 345)

They also note continuing tensions between the use of quantitative and qualitative methods in the study of classroom talk, and suggest that this is limiting the success of establishing with any certainty whether some types of teacher–student interaction—such as those which are more 'dialogic'—can be associated with improved levels of participation amongst students or with better learning outcomes. They suggest that future research might best involve the design of large-scale studies which use quantitative methods to determine whether patterns of talk which qualitative analysis has suggested have particular educational value are indeed significantly associated with positive outcomes, and to such an extent that teachers can reasonably be expected to change their practices. This should not be taken as an argument for the superiority of large-scale, quasi-experimental quantitative studies over more intensive, smaller scale, qualitative investigations, or for the simplistic application of 'medical models' of applied research to studies of teaching and learning (Goldacre, 2013). Rather, it is a plea for the value of 'mixed method' research to be taken more systematically into account in this field of study: a plea which we would wholeheartedly echo.

Conclusions

In summary, educational researchers now know significantly more about the forms and functions of classroom talk and its influence on pupils' learning. Although not yet supported by the kind of evidence from large-scale, randomised control style studies which have been advocated recently by critics of educational research, the results have nevertheless identified some ways that teachers can most productively interact with students, and some ways that the value of any such interactions is commonly squandered. What is known now shapes, though probably still only to a limited extent, the initial and continuing training provided for teachers. However, some politicians (and their media supporters), at least in England, seem either completely unaware that any of this research has ever taken place, or determined to dismiss its evidence and educational implications. Thus the current English Secretary of State for Education (Michael Gove) has dismissed any implications from educational research that teachers should interact with students in anything but the most traditional ways as merely 'progressive', left-wing ideology. In his own words: 'almost any activity which is not direct instruction has been lauded by the so-called progressives while direct instruction has been held up to criticism and ridicule' (Gove, 2013). Nevertheless, an awareness of the importance of the quality of classroom interaction seems to have grown amongst those who are in direct contact with students, and who are best positioned to note the transformative power of a talk-focused approach to teaching and learning—the teachers (see for example Coultas, 2006; Dawes, 2004). In our own experience, as judged by requests for professional development sessions and participants' responses to such sessions, interest amongst teachers in understanding and improving the quality of classroom talk is higher than it has ever been, not only in Britain but internationally.

Notes on contributors

Neil Mercer is Professor of Education at the University of Cambridge, where he is also Vice-President of the college Hughes Hall. He is a psychologist with particular interests in the development of children's language and reasoning abilities, and the role of the teacher in that development. His research with Rupert Wegerif and Lyn Dawes generated the *Thinking Together* approach to classroom teaching, and he has worked extensively with teachers, researchers and educational policy makers on improving talk for learning in schools. His most recent books are *Exploring Talk in School* (with Steve Hodgkinson), *Dialogue and the Development of Children's Thinking* and *Interthinking: putting talk to work* (both with Karen Littleton).

Lyn Dawes taught secondary Science before re-training to become a primary teacher. Now an Education Consultant, Lyn taught science and education at The University of Bedford, The University of Northampton and the University of Cambridge on PGCE and BA(QTS) courses. She has a special interest in 'Talk for Learning' and regularly provides practical workshops for education professionals in schools around the UK. These workshops are based on the Thinking Together approach to teaching and learning. Her most recent books are *Talking Points—discussion activities in the primary classroom*; and *Talking Points for Shakespeare Plays.*

References

Alexander, R. (2001). *Culture and pedagogy: International comparisons in primary education*. Oxford: Blackwell.

Alexander, R. (2006). *Towards dialogic teaching*. York: Dialogos.

Amidon, E., & Hunter, E. (1967). *Improving teaching: The analysis of classroom verbal interaction*. New York: Holt, Rinehart & Winston.

Banks, O. (1978). *The sociology of education: A bibliography*. London: Frances Pinter.

Barnes, D., Britton, J., Rosen, H., & English, L. (1969). *Language, the learner and the school*. Harmondsworth: Penguin.

Bernstein, B. (1975). *Class, codes and action. Vol. 3: Towards a theory of educational transmissions*. London: Routledge & Kegan Paul.

Bloome, D., Carter, S., Christian, B., Otto, S., & Shuart-Faris, N. (2005). *Discourse analysis and the study of classroom language and literacy events: A microethnographic approach*. Mahwah, NJ: Erlbaum.

Britton, J. (1978). Vygotsky's contribution to pedagogical theory. *English in Education, 21*, 22–26.

Brown, A. L., & Palincsar, A. S. (1989). Guided, co-operative learning and individual knowledge acquisition. In L. B. Resnick (Ed.), *Knowing, learning and instruction* (pp. 393–453). Hillsdale, NJ: Lawrence Erlbaum.

Bullock Report (1975). *A language for life: Report of the Committee of Enquiry appointed by the Secretary of State for Education and Science under the chairmanship of Sir Alan Bullock FBA*. London: HMSO.

Cazden, C. (Ed.). (1972). *The functions of language in the classroom*. New York: Teachers College Press, Columbia University.

Chinn, C., Anderson, R., & Waggoner, M. (2001). Patterns of discourse in two kinds of literature discussion. *Reading Research Quarterly, 36*, 378–411.
Coultas, V. (2006). *Talking and learning in challenging classrooms: Strategies for behaviour management and talk-based tasks*. London: Routledge.
Cox, B. (1991). *Cox on Cox: An English curriculum for the 1990s*. London: Hodder & Stoughton.
Creese, A. (2008). Linguistic ethnography. In K. A. King, & N. H. Hornberger (Eds.), *Encyclopedia of language and education, 2nd edn, Volume 10: Research methods in language and education* (pp. 229–241). New York: Springer.
Dawes, L. (2004). Talk and learning in classroom science. *International Journal of Science Education, 26*, 667–695.
Dewey, J. (1933). *How we think: A restatement of the relation of reflective thinking to the educative process* (revised ed.). Boston, MA: D. C. Heath.
Dixon, C., & Green, J. (2005). Studying the discursive construction of texts in classrooms through interactional ethnography. In R. Beach, J. L. Green, M. Kamil, & T. Shanahan (Eds.), *Multidisciplinary perspectives on literacy research* (pp. 349–390). Cresshill, NJ: Hampton Press.
Edwards, A. D., & Furlong, V. J. (1978). *The language of teaching*. London: Heinemann.
Edwards, D., & Mercer, N. (1987/2012). *Common knowledge: The development of understanding in the classroom*. London: Methuen/Routledge.
Edwards, A. D., & Westgate, D. (1994). *Investigating classroom talk* (2nd ed.). London: Falmer Press.
Flanders, N. A. (1970). *Analysing teacher behavior*. Reading, MA: Addison-Wesley.
Galton, M., Hargreaves, L., Comber, C., Pell, T., & Wall, D. (1999). *Inside the primary classroom: 20 years on*. London: Routledge.
Galton, M., Simon, B., & Croll, P. (1980). *Inside the primary classroom (the ORACLE Project)*. London: Routledge & Kegan Paul.
Garfinkel, H. (1974). The origins of the term 'ethnomethodology'. In R. Turner (ed.), *Ethnomethodology: selected readings* (pp. 15–18). Harmondsworth: Penguin.
Gee, J. P., & Green, J. (1998). Discourse analysis, learning and social practice: A methodological study. *Review of Research in Education, 23*, 119–169.
Goldacre, B. (2013). *Building evidence into education*. Retrieved from http://media.education.gov.uk/assets/files/pdf/b/ben%20goldacre%20paper.pdf
Gove, M. (2013, 5 September). *Michael Gove speaks about the importance of teaching*. Speech retrieved from https://www.gov.uk/government/speeches/michael-gove-speaks-about-the-importance-of-teaching
Green, J., & Wallat, C. (Eds.). (1981). *Ethnography and language in educational settings*. Norwood, NJ: Ablex.
Hardman, F., Smith, F., & Wall, K. (2003). 'Interactive Whole Class Teaching' in the National Literacy Strategy. *Cambridge Journal of Education, 33*, 197–215.
Hargreaves, D. (1984). Teachers' questions: Open, closed and half-open. *Educational Research, 26*, 46–52.
Heath, S. B. (1983). *Ways with words: Language, life and work in communities and classrooms*. Cambridge: Cambridge University Press.
Heath, S. B. (2012). *Words at work and play: Three decades of family and community life*. Cambridge: Cambridge University Press.
Howe, C., & Abedin, M. (2013). Classroom dialogue: A systematic review across four decades of research. *Cambridge Journal of Education, 43*, 325–356.
ILEA (1984). *Improving secondary schools* (Report of the Committee on the Curriculum and Organization of Secondary Schools). London: Inner London Education Authority.

Kyriacou, C., & Issitt, J. (2008). *What characterizes effective teacher–pupil dialogue to promote conceptual understanding in mathematics lessons in England in Key Stages 2 and 3?* (EPPI-Centre Report no. 1604R). London: Social Science Research Unit, Institute of Education.

Mehan, H. (1979). *Learning lessons: Social organization in the classroom*. Cambridge, MA: Harvard University Press.

Mercer, N. (2008). The seeds of time: Why classroom dialogue needs a temporal analysis. *Journal of the Learning Sciences, 17*, 33–59.

Mercer, N. (2009). The analysis of classroom talk: Methods and methodologies. *British Journal of Educational Psychology, 80*, 1–14.

Mercer, N., & Edwards, D. (1981). Ground rules for mutual understanding: A social psychological approach to classroom knowledge. In N. Mercer (Ed.) *Language in school and community* (pp. 30–46). London: Edward Arnold.

Mercer, N., & Hodgkinson, S. (Eds.). (2008). *Exploring talk in school*. London: Sage.

Mercer, N., & Littleton, K. (2007). *Dialogue and the development of children's thinking*. London: Routledge.

Monaghan, F. (1999). Judging a word by the company it keeps: The use of concordancing software to explore aspects of the mathematics register. *Language and Education, 13*, 59–70.

Mortimer, E. F., & Scott, P. H. (2003). *Meaning making in science classrooms*. Milton Keynes: Open University Press.

Myhill, D. A., Jones, S., & Hopper, R. (2005). *Talking, listening, learning: Effective talk in the primary classroom*. Milton Keynes: Open University Press.

Norman, K. (Ed.). (1992). *Thinking voices: The work of the National Oracy Project*. London: Hodder & Stoughton.

Nystrand, M. (1997). *Opening dialogue: Understanding the dynamics of language and learning in the English classroom*. New York: Teachers College Press.

Nystrand, M., Wu, L., Gamorgan, A., Zeiser, S., & Long, D. (2003). Questions in time: Investigating the structure and dynamics of unfolding classroom discourse. *Discourse Processes, 35*, 135–198.

Rojas-Drummond, S., & Mercer, N. (2004). Scaffolding the development of effective collaboration and learning. *International Journal of Educational Research, 39*, 99–111.

Scott, P. H., & Asoko, H. (2006). Talk in science classrooms. In V. Wood-Robinson (Ed.) *ASE Guide to Secondary Science Education* (pp. 55–73). Hatfield: Association for Science Education (ASE).

Sinclair, J., & Coulthard, M. (1975). *Towards an analysis of discourse: The English used by teachers and pupils*. London: Oxford University Press.

Spindler, G. (1982). *Doing the ethnography of schooling: Educational anthropology in action*. New York: Holt, Rinehart & Winston.

Stubbs, M. (1983). *Language, schools and classrooms*. London: Methuen.

Vygotsky, L. S. (1962). *Thought and language*. Cambridge, MA: MIT Press.

Vygotsky, L. S. (1978). *Mind in society*. Cambridge, MA: Harvard University Press.

Wegerif, R., & Mercer, N. (1997). Using computer-based text analysis to integrate quantitative and qualitative methods in the investigation of collaborative learning. *Language and Education, 11*, 271–286.

Wells, G. (1978). Talking with children: The complementary roles of parents and teachers. *English in Education, 12*, 15–38.

Wells, G. (1999). *Dialogic inquiry: Toward a sociocultural practice and theory of education*. Cambridge: Cambridge University Press.

Wells, G., & Ball, T. (2008). Exploratory talk and dialogic inquiry. In N. Mercer, & S. Hodgkinson (Eds.), *Exploring talk in schools* (pp. 167–184). London: Sage.

Wilkinson, A. (1970). The concept of oracy. *The English Journal, 59*, 71–77.

Wood, D. (1992). Teaching talk. In K. Norman (Ed.), *Thinking voices: The work of the National Oracy Project* (pp. 203–214). London: Hodder & Stoughton.

Ziechner, K. (1994). Research on teacher thinking and different views of reflective practice in teaching and teacher education. In I. Carlgren, G. Handal, & S. Vaage, *Teachers' minds and actions; Research on teachers' thinking and practice* (pp. 9–27). London: Falmer Press.