Argumentation and dialogic teaching: alternative pedagogies for a changing world

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Abstract

Studies of classroom communication indicate that certain patterns of interaction – exploratory talk, argumentation and dialogue – promote high-level thinking and intellectual development through their capacity to involve teachers *and* learners in joint acts of meaning-making and knowledge construction. Applied classroom research in the UK, such as Dawes, Mercer and Wegerif's (2000) *Thinking Together* project and Alexander's (2004) *Dialogic Teaching*, suggest that dialectical/dialogic pedagogies are beginning to make inroads into traditional patterns of classroom communication in which learners are positioned as compliant supporters of the teacher's purpose, their voices barely acknowledged. Yet experience shows that change is slow: patterns of interaction are tied to culture and history (Alexander, 2001) and deeply habituated in teachers' consciousnesses. Without deeper understanding of these issues and transformation of the conditions and contexts in which classroom interactions are embedded, it is difficult to see how change in discourses and practices might be sustained.

Building on critical examination of evidence from research, this review explores both the possibilities and imperatives for change in education in the UK today. It draws attention to curricular developments, organisational restructuring and global imperatives for change, and considers the role of new technologies in these processes. 'Digital tools' (Ravenscroft and McAlister, 2008) offer children opportunities to rehearse argumentation skills, and learn in less formal, more personal ways. These challenge not only the traditional emphasis on the value of 'book-learning' but also the institutional organisation of learning itself. This review explores the implications of adopting dialogic pedagogies for understandings of knowledge and how it is disseminated to others. It suggests that teachers may need to reconfigure their roles in order to guide rather than control the processes of inquiry and knowledge production.

Keywords: pedagogy, school, communication, argumentation, teaching

Outline

Many people regard language as a neutral conduit of meanings; for others language is constitutive of the meanings communicated. These alternative perspectives are relevant to understandings of knowledge as fixed and knowable or emergent and fluid, and are central to debates about the purpose and role of education in societies today.

Of equal significance is the Bakhtinian notion that all language, whether written down or spoken, carries evaluative overtones (Bakhtin, 1981). Words are imbued with the histories of their use and the values and assumptions of the individuals who produce them. In this way, as Daniels emphasises in his recent work on activity theory, social-cultural and historical *values* and priorities find expression in the *discourses* mediating classroom interactions (2001).

When pupils are encouraged to reason and argue about ideas they are being invited to adopt the habits of critical inquiry that test existing orthodoxies and challenge the natural order of things. They might ask: What constitutes knowledge? How is knowledge organised, interpreted and communicated? Who owns knowledge? Whose ideas are salient?

Such questions pose dilemmas for all those involved in education in a fast-paced technological world where the World Wide Web is widely regarded as an important and easily accessible source of global information. In addition internet networks and knowledge communication forums, such as Wikipedia, allow pupils to construct and exchange knowledge in new and original ways and often outside traditional school boundaries.

The dilemmas for teachers are heightened by a growing body of research to show that children learn more effectively, and intellectual achievements are higher, when they are actively engaged in pedagogic activity, through discussion, dialogue and argumentation (Mercer and Littleton, 2007). Thus, equipping children with the skills and habits of mind required for living in the 21st century and beyond is a risky and challenging business for educators but one that cannot be easily ignored. Children need to develop the critical reasoning and inquiry skills that will enable them to participate effectively and safely in the wider communicative practices to which they have increasing access.

This review explores forces for change in education today. It begins by establishing the context for debate about the relationship between talk, learning and pedagogy and the foci of interest that account for the different directions in which research has developed. These include emphasis on the development of argumentation skills arising from investigations of exploratory talk, and dialogic teaching rooted in wider pedagogical considerations. The following sections are organised around 'bridging themes' suggested by Mercer and Littleton as routes to establishing a 'unifying sociocultural, dialogic theory of how knowledge is jointly constructed and how learners achieve greater understanding' (2007, p135). These are i) exploratory talk (and by extension argumentation) ii) dialogic teaching and iii) scaffolding. To these we add iv) purpose since this is central to human action at every level in the overarching activity system of education.

The review ends by considering how it might be possible to reconcile tensions between the need to introduce students to existing (cultural) bodies of knowledge and norms of thinking in ways that recognise the legitimacy of alternative perspectives and build on the experiences of individuals. It explores opportunities for capitalising on different kinds of spaces for learning inside schools and beyond.

Talk, learning and pedagogy: Context of a debate

According to Daniels (2001) teachers' and students' actions are linked to socio-cultural and historical contexts through spoken language and other semiotic mechanisms. This proposition is supported by evidence from observations of classroom interactions in England (eg Alexander, 1995, 2001) and in France, India, Russia and the United States (Alexander, 2001). Through comparative analysis of classroom discourse in these five countries, Alexander identifies five categories of talk observed in use:

- *rote*: the drilling of facts, ideas and routines through constant repetition;
- *recitation*: the accumulation of knowledge and understanding through questions designed to test or stimulate recall of what has been previously encountered, or to cue pupils to work out the answer from clues provided in the question;
- *instruction/exposition*: telling the pupil what to do, and/or imparting information and/or explaining facts, principles or procedures
- *discussion*: the exchange of ideas with a view to sharing information and solving problems
- *dialogu*e: achieving common understanding through structured, cumulative questioning and discussion which guide and prompt, reduce choices, minimise risk and error, and expedite 'handover' of concepts and principles.

Alexander proposes that communicative practices in classrooms across the world assume a distinctiveness that reflects the way in which particular societies are organised, the manner in which individuals relate to society and each other, and differing conceptualisations of knowledge. Additionally, there is an historical dimension to talk as changes over time etch themselves into the discourses in circulation. All these factors lead to an overlaying and hybridity of practices. Teaching in English primary schools represents an amalgam of influences including the relics of the 19th century elementary system with its emphasis on reading, writing, arithmetic and rote learning, 1960s progressivism and its subsequent backlash and the current return to 'basics' overlaid with 'skills' and 'competences' (Alexander, 2008a, pp100-107).

Another enduring characteristic of English primary education is the emphasis on individual participation. Consequently, given the low ratio of teachers to children in many classrooms, learners are often competitively involved in a game of 'guess what the teacher is thinking' and a search for 'right' answers (Alexander, 2008a, p106). The dominant pattern of communication consists mainly of teachers talking with little uptake of children's contributions – the *recitation* script alluded to above. Despite calls for teaching to become more 'interactive', research suggests that the 'standards drive' in literacy and numeracy has been counter-productive with traditional patterns of communication reinforced rather than diffused (Moyles et al, 2003; Smith et al, 2004). It is difficult to envisage how communicative practices might alter without fundamental changes to the way in which knowledge is framed and learning assessed.

However, perhaps a radical shift in thinking is not what is required, rather a *movement towards change* set in progress by increasing awareness of the possibilities for communicative action and potential impacts on student learning and development. The forms of talk noted above have been categorised as one of several *repertoires* from which teachers might select, 'on the basis of fitness for purpose in relation to the learner, the subject-matter and the opportunities and constraints of context' (Alexander 2008a, p109). The remaining 'repertoires' include 'talk for everyday life', 'talk for learning' and 'organisational contexts' (eg whole class teaching, group work, individual tutoring). Although these latter have the potential to shape interactive opportunities and dynamics it is the quality and content of talk that are more significant for children's

learning (Alexander, 2008b, p40). Of the different forms of talk *discussion* and *dialogue* are singled out for their cognitive potential. In dialogic interactions, children are exposed to alternative perspectives *and* required to engage with another person's point of view in ways that challenge and deepen their own conceptual understandings. It is the element of 'dialectic', understood as logical and rational argument, which distinguishes dialogue from mainstream oral or 'interactive' teaching as currently understood by many teachers (Alexander, 2008a, p27).

Attention to meanings alerts readers to subtle differences in research priorities which threaten to confuse all those mandated with responsibility for improving children's opportunities to learn. Without deep understanding of the pedagogical issues and the actions required of them, teachers and teacher educators might view debates about the quality of classroom talk and the role of argument in learning and cognitive development as just another distraction, hence the need for some clarification of terms.

Words and meanings

Words and meanings are slippery and often have implications for human activity that reach beyond the particular socio-cultural, national and historical contexts in which they first entered circulation (Simon, 1987; Alexander, 2008a, pp97-99).

Wegerif draws attention to this problem in the context of research on educational dialogue (2008). He argues that although the term *dialogic* is often sourced to Vygotsky, his approach to psychology was actually grounded in Hegelian/Marxian *dialectics*. This is a philosophical stance in which individual development and human society advance through the progression of rational argument in which thesis and antithesis are integrated into increasingly complex syntheses leading to some version of a rational, unified society. This contrasts with a Bakhtinian understanding of human learning and development for which *dialogue* holds the key.

Russian philosopher, Mikhail Bakhtin (1895-1975) conceptualised language not as a means of labelling objective, external realities but as a resource to be drawn on by social actors. Knowledge of *who* is speaking and the circumstances of the speech event (the sphere of activity, participants and tone and intonation of speech) are essential for any real understanding of the meanings exchanged in everyday life (Bakhtin, 1981, pp341-342).

From a Bakhtinian perspective (1981), *dialogue* is not merely a term for describing the structure of speech in discourse: it is a phenomenon that penetrates the very structure of words themselves. The many different meanings that words express are shaped in the dialogic interaction with 'alien' words at the moment of utterance. Speakers' utterances, orientated towards the active responsive understanding of others, are selectively appropriated and assimilated into new concept systems. It follows then that every word written or spoken is filled with the voices of others and 'there is no 'overcoming' or 'synthesis'' (Wegerif, 2008, p350). Dialogue is not simply a precondition for learning but essential for knowledge construction and human development generally.

This tension between notions of *dialogue* and *dialectic* is yet more bewildering when the term *dialogue* is used loosely to refer to talk of any kind (eg Barnes, 1976) or defined more precisely as exhibiting *dialectical* qualities. Coffin and O'Halloran (2008) offer useful clarification from their interest in investigating the processes of *argumentation* in educational contexts. They define *argumentation* as the 'process' and *argument* as the 'product' of 'putting forward and negotiating ideas and perspectives' (2008, p219). They draw attention to two trends that have emerged in research in the past decade, the first linking *argumentation* and *dialogue* through socio-cultural theories of learning and development and the second focusing on *argumentation, collaborative learning* and *problem solving.*

The first trend relates to a reawakening of interest in *dialogue* from a sociocultural perspective. Reminding readers of the Vygotskian (1978) view of learning and development, Coffin and O'Halloran describe how transformations in learning occur when learners are able to examine and reflect critically on alternative positions through dialogic interactions with their peers or experts. Thus 'social argumentative dialogue' (McAlister, Ravenscroft and Scanlon, 2004) is internalized and leads to the development of higher mental processes.

The second trend stems from investigations of collaborative learning and problem-solving processes with a particular focus on understanding how joint activities using computers might enhance students' abilities to argue effectively. The imperatives of 'learning-design' approaches to pedagogy in which digital technologies are recognised for their potential to promote learning that is 'increasingly more personalized, informal and emergent – rather than the outcome of highly structured institutional practices' (Ravenscroft and Cook, 2007, cited by Ravenstone and McAlister, 2008, p318) have prompted researchers to investigate how development of effective argumentation might be supported and enhanced with appropriately designed 'digital tools'.

Coffin and O'Halloran (2007, p220) suggest that one of the key features of computer-supported collaborative learning (CSCL) is acknowledgement of the role of 'confrontation' in complex problem-solving activities. Relating this to learning and development more generally they add: 'complex-problem-solving is viewed as central to knowledge building with new knowledge derived from the argumentation process being integrated into existing cognitive structures' (*ibid* , p220). Here then is a description of goal-orientated processes that are more akin to *dialectical* than *dialogical* thinking but occurring in computer environments.

Yet, encouragement of argumentative practices has implications for all those involved in education. As students are empowered to ask questions and reflect critically on the adequacy of information received, teachers may be re-positioned alongside pupils (and the internet) as alternative sources of support and information, rather than gatekeepers of knowledge. This challenges not only teachers' professional status as traditionally conceived, but also their abilities to manage students who are nosier and more dynamically engaged in learning. Even supposing teachers are prepared to take these risks, they face other challenges, including their abilities to access appropriate software and to effectively scaffold children's learning involving around new technologies (Coffin and Hewings, 2005; Yelland and Masters, 2007).

Is there, then, a viable case for promoting knowledge construction through dialogic interactions that have a critical or combative edge when the educational purpose dictates? This certainly appears to be the thrust behind Alexander's conceptualisation of *dialogic teaching.* The following sections consider the evidence from a growing body of research.

Talk, learning and pedagogy: a movement gathers pace

In the last decade researchers have expressed interest in understanding *dialogue* as it is used to transact educational purposes in classrooms (Wells, 1999; Alexander, 1995, 2001; Wegerif, 1996, 2008 and with Mercer, 1997; Mortimer and Scott 2004; Wolfe, 2006). However, as previously noted, it would be erroneous to regard this group as a unified whole since the term *dialogue* is used in ways that reflect the interests of research communities that have followed two different trajectories – one focused on the nature of student-student interactions and the other on teacher-student interactions.

Of course, if we accept that language has an integral role in structuring experience and shaping meanings, and evolves as other aspects of human cognitive functioning develop (Halliday, 2003) then such divisions are fruitless. Dialogic pedagogies are premised on the ability of students *and* teachers to establish reciprocal relationships through language and other means. Similarly collaborative interactions between students are more difficult to effect when the wider contexts of interaction constrain the possibilities for dialogue. It is relevant for this review then that we probe these alliances with a view to identifying their commonalities and considering how they might be reconciled, if not in theory as Mercer and Littleton suggest (2007, p135), then at least in practice.

Exploratory Talk and Argumentation

Three studies from the late 1970s/early 1980s stand out as having particular significance for the development of thinking and research into classroom talk in England and elsewhere in the world. These are:

- An analysis of teacher-student discourse in secondary classrooms by linguists Sinclair and Coulthard (1975) who identified initiation-response-feedback (IRF) as the predominant form of classroom exchange. In this pattern of interaction teachers ask questions that test knowledge and permit little expansion of pupils' meanings. Researchers in the US coined the phrase 'recitation script' to capture the repetitive quality of IRF (eg Tharp and Gallimore, 1988);
- A study of classroom communication in secondary schools, in which Barnes (1976) identifies the power of 'exploratory discussion' for children's learning in small groups. *Exploratory discussion* or *dialogue* is characterised by talk in which children operate in hypothetical mode, speculating and asking questions that keep the discourse open and allow ideas to develop;
- The first large-scale study of primary classrooms in England (ORACLE - Galton et al, 1980) using systematic observation techniques which showed that although children were seated in groups, as befitted the enquiry-based classrooms of the 1970s, there was little real collaboration in evidence.

Taken together it seems that particular forms of classroom communication were identified for their potential to advance learning but were rarely observed even when the organizational arrangements and curriculum conditions were felicitous. Research in recent years suggests little has changed (Galton et al, 1999; Mroz et al, 2000; Earl et al, 2003). A deeper understanding of how and when such talk is desirable and the conditions under which it flourishes is still required.

Drawing on the work of Barnes and a study of the way in which *common knowledge* is constructed through discourse and joint activity in classroom settings (Edwards and Mercer, 1987), Mercer and colleagues turned their attention to investigations of student-student interaction with a particular interest in understanding the mechanisms of collaborative learning. This research led to identification of two communicative strategies, summary *recaps* and *reformulations* (Mercer, 1995, p95) that appeared to have particular salience for students' learning in small groups and matched strategies used by teachers to gather information together and introduce technical terms 'in situations where the context helps make meanings clear' (*ibid,* p35).

In a later work (2000) Mercer referred to these together with *elicitations, repetitions* and *elaborations*, as 'conversational techniques for building the future on the foundations of the past' (pp52-56). Used judiciously, they have the potential to develop learners' awareness of the processes of knowledge construction at the deeper levels of consciousness associated with transformation of understandings. Mercer also drew attention to three forms of argument, or 'social modes of thinking', that underpinned development of the Thinking Together project (Dawes, Mercer and Wegerif, 2000). These include:

- disputational talk which is competitive and characterised by the unwillingness of participants to take on the other person's point of view

- cumulative talk in which speakers build constructively and uncritically on each other's contributions

- exploratory talk which proceeds by virtue of critical reflection and reasoned argument in which proposals may be 'challenged and counter-challenged'. Crucially, 'knowledge is made publicly accountable and reasoning is visible in the talk' (Mercer, 2000, p98)

The team emphasized the importance of teachers agreeing rules for talk and creating a dialogic classroom ethos in which students orientate to each other 'with a view to discovering new and better ways of jointly making sense' rather than protecting their own identities and interests (Mercer, 2000, pp102-103). Given the demands made on children's verbal proficiency and abilities to listen and respond appropriately to others in settings where they are often unaccustomed to having a voice of their own, attention to these relational and emotional factors is vital. As Lefstein reminds us, dialogue is not always comfortable. It is also implicated with 'competition, argument, struggle to be heard, persuasion, "ego", and like all other social arenas – power relations' (2006, p6). It is encouraging then that despite any inherent risks the Thinking Together approach (http://www.standards.dfes.gov.uk/thinkingskills) is gaining increasing acceptance in the educational world, having been recognised by the QCA and BECTa and incorporated into the Primary National Strategy and KS3 Strategy for Teaching and Learning in the Foundation Subjects.

Members of the same team have since been involved in testing Vygotsky's claim that 'social interaction shapes intellectual development' through the medium of the cultural tool of language (Mercer and Littleton, 2007, p133). Mercer and Littleton report on a series of studies through the 1990s (Spoken Language and New Technologies/SLANT) in which researchers and practitioners sought to explore the potential of computer-based activities as contexts for joint learning in mathematics and science. Experimental software packages were used to raise awareness of spoken language and prompt discussion between students at pre-determined points in the tutoring sequence. Thus researchers were able to experiment with breaking the characteristic IRF exchange by introducing D (Discussion) after an initiating move. In their final project report (2003) (http://www.nuffieldcurriculumcentre.org/fileLibrary/pdf/SMILEfinalreport.pdf.) Mercer et al noted that IDRF appeared to be 'useful in allowing for active learning that can be framed and directed towards learning goals'.

The experiments demonstrated improvement in individual reasoning and attainment, as measured by Raven's matrices, through students' participation in collaborative talk and thinking together (eg Wegerif and Dawes, 2004). They allowed Mercer and Littleton to assert with some confidence that 'Vygotsky was right' in claiming that individuals learn through social interaction mediated by artefacts and cultural tools such as language, although they were careful to add that the beneficial effects observed resulted from specific kinds of interaction, notably *exploratory talk* and *dialogic teaching* (2007, p133).

Dialogic Teaching

Alexander (2004) suggests there is little to distinguish the 'conversational techniques' of *recapitulation*, *elicitation* and *repetition* from traditional recitation (IRF) teaching adding 'only reformulation has potential to take a specific answer or statement forward'. Nevertheless reformulation does not in itself constitute a 'repertoire' of dialogic techniques: 'what is said needs actually to be reflected upon, discussed, even argued about, and the dialogic element lies partly in getting pupils themselves to do this (p21).

Emphasizing the *dialectic* in *dialogue* and the importance of contextualising talk in pedagogical action, Alexander distinguishes between *conversation* that tends to be relaxed and may lead nowhere and *dialogue*, characterised by purposeful questioning and chaining of ideas into 'coherent lines of thinking and enquiry' – the dialogic principle of *cumulation*. This tilts control of the conversational floor away from the teacher's initiating moves to students' responsive utterances, the R in I(R)F. By listening and responding to what children actually say and do, teachers are in a position to support individuals more effectively in their learning, a principle enshrined in formative assessment (Black et al, 2002) and the extended notion of 'learning as assessment'. Here learning is defined not only as acquisition of knowledge but more potently as participation in knowledge building practices (James, 2008).

These ideas fit within a constructivist framework which recognizes learners as active participants in the teaching-learning processes. Indeed the distinction drawn by Alexander between repertoires of learning and teaching talk acknowledges this mutuality. Nevertheless attunement of individuals to one another in any relationship relies on trust and respect for others. These conditions are often difficult to achieve in classrooms, thus a further set of principles are designed to guide the dynamics rather than the content of interaction: dialogic teaching is *collective* (teachers and children address learning tasks together), *reciprocal* (teachers and children listen to each other, share ideas and consider alternative viewpoints) and *supportive* (children articulate ideas freely without fear of embarrassment over 'wrong' answers and help each other achieve common understandings) (Alexander, 2008b, pp112-113).

Dialogic teaching has been intensively trialled in Yorkshire, London and other parts of Britain and is now incorporated into professional support materials from QCA and the UK government's Primary and KS3 strategies. Trialling in North Yorkshire (Talk for Learning) and the London Borough of Barking and Dagenham (Teaching through Dialogue) began in 2001-02.

The projects used different strategies to meet the ends of:

- fostering extended repertoires of teaching talk, learning talk and organizational form
- shifting dynamics and content of talk to meet the criteria of Dialogic Teaching
- repositioning approaches to meet principles.

Teachers used video to study and evaluate their practice, assisted in some instances by students. One unexpected and promising consequence of this enquiry-based project was development of children's meta-linguistic awareness. In a Media Pack made available through North Yorkshire County Council (2006) pupils were seen discussing the dynamics and mechanisms of interaction using appropriate technical language. The episodes were naturalistic and filmed without rehearsal or repetition and are offered as stimuli for further professional dialogues.

The projects in North Yorkshire and London are ongoing with summary reports available online at http://www.robinalexander.org.uk/dialogicteaching.htm. In a recent evaluation of both projects, Alexander identifies some of the emerging challenges affecting change (2008a, pp114-9). These include:

- Evidence of widening gaps in practice as some teachers achieve more real change than others and are motivated to continue building on their successes

- Less attention has been given to developing the repertoire of children's talk – their capacities to narrate, explain, ask questions, speculate, argue, reason and

justify etc. Without the appropriate 'tools' students are limited in their abilities to think and participate fully in the discourses to which they are introduced

- The principle of *cumulation* challenges teachers' professional skills and subject knowledge. It makes demands on their insights into the capacities of children and hence their abilities to offer scaffolds that link children's understandings to the culture's way of making sense

- Children are being given more time to think and respond but the challenge of building on their responses (the principle feature of dialogic talk), remains unsolved in many cases. Traditional communicative practices are ingrained in institutions and there remains a strong sense that teachers are expecting certain answers.

Responding directly to the first concern, Alexander (2008b) suggests that in order to effect a manageable transformation teachers might concentrate first on getting the ethos and dynamics of classroom talk right before attending to the content and progression of ideas. However the final observation points to an inherent difficulty arising from issues of power and authority that occur whenever people come together in groups but which are particularly salient in classroom contexts where inequalities between teachers and students, in terms of status and age at least, are a fact of everyday life. For although knowledge and expertise are intentionally omitted from this list in recognition of the different experiences that learners bring to their studies, it is important surely to value the role of qualified practitioners in children's learning? Herein lies a conundrum for all potential 'dialoguers' (Freire, 1970) in the UK today.

The Bakhtinian notion of dialogue assumes an interweaving of voices in which individuals test their perspectives against others past, present and co-present. It allows Bakhtin to propose that our words and meanings are 'filled with others' words, varying degrees of our-own-ness, varying degrees of awareness and detachment (1986, p89). Surely then the notion of *purposeful* dialogue, orientated towards (curriculum) goals selected by the teacher, is fundamentally flawed? Alexander is interested in the possibilities for teachers *and* children to build on each other's contributions in developing knowledge. Yet the suggestion that arguments are logically progressed, with irrelevant contributions falling out of the line of inquiry (*cumulation*), places huge demands on teachers required to steer pedagogic content whilst ensuring that children's contributions are woven into the unfolding discourse. This is particularly problematic when teachers are faced with students' bizarre or incorrect responses and raises questions concerning the extent to which they should stand back and permit children to explore ideas unassisted and when and how to intervene with new information. And what of the individual's right to silence? There is a danger of conjuring up an idealized world that overlooks the roles of theorists, pragmatists and reflectors in collective enterprises (Freire, 1996).

However, as we have seen, Alexander recommends that dialogic teaching requires selection from repertoires that are appropriately harnessed to the task in hand and the activities through which they are mediated. Lefstein suggests this system of choices might be regarded as a pragmatic model of dialogue for school settings (2006, p12). Indeed the principles chime with Burns and Myhill's contention that 'teachers should be concerned with the *interplay* between pupils' talk and their learning needs and [their] use of differing forms and functions of language to enable children to think and explore their learning through a real *dialogue* (2004, p48). Lefstein nonetheless builds a convincing case for supplementing Alexander's principles with the criteria of *criticality* and *meaningfulness* in a bid to emphasise the benefits of 'dialogue that starts from difference and proceeds through critical argument and inquiry to competing understandings and further inquiry (2006, p13) for he is concerned with the question: 'What happens to difference that has no place in the official model of dialogue?'

Whilst it is important for researchers to tussle with philosophical issues it is essential also that teachers introduce children to these empowering discourses not only as tools for effective learning but as the means most likely to assist their development as active citizens and decision-makers in 'the good society' (Alexander 2008a, chapter 6), an imperative that takes dialogue out of the classroom to wider contexts of culture and society. The immediate challenge for teachers lies in knowing when and how to disrupt the flow of traditional patterns of communication. This requires a willingness to explore and experiment with their practices informed by awareness of the way in which interactions are affected by 'generic constraints of space time and power and in response to the complex microculture of the classroom (2008a, p97). Without these principled understandings any changes in practice might amount to no more than superficial adjustments.

This brings our review appropriately to consideration of *scaffolding* and *purpose* concepts bridging many of the ideas introduced so far and linking this review to the wider framework of activity theory.

Scaffolding

As with many previous terms, the notion of scaffolding can be considered at several levels in the activity of education. Edwards and Mercer describe the role of teachers as 'scaffolding' children's entry into the universe of educational discourse (1987, p161). The scaffolding amounts to creation of a framework of talk and action that provides a platform for the development of common knowledge. This is important given one of the authors' central arguments that higher mental functioning is distinguished by the levels of reflection and self-awareness awakened by an activity, rather than disembeddedness from context. In the Thinking Together programmes these principles are reflected in the requirement that children establish ground rules for talk that encourage explicit use of reasoning words – 'what', 'how', 'why'.

Notions of scaffolding also surface in Alexander's work. The principles of dialogic teaching that relate to the conduct and ethos of classroom talk (collectivity, reciprocity and support) might be regarded as prompts for creating contexts in which children feel able to explain and test their understandings without fear of ridicule or failure and in the knowledge that their ideas will be taken seriously. In this way the processes of coming to know are 'scaffolded' by the affective context. At another level, Alexander's insistence that dialogue is understood as part of a wider conceptual framework of pedagogy, reminds teachers of the way in which opportunities to learn are enhanced or constrained by the nature of the activities and discourses in which children engage (2008a, p96), points returned to later in this review.

Finally, however, researchers such as Wood (1988, 1998 and with Bruner and Ross in 1976), Wertsch (1991, and with Addison Stone in 1985) and Bruner (1986) are interested in the processes through which knowledge is built and taken-up by individuals at the micro-level of interaction between teachers and students. At this moment of interplay 'differences in how something is said, and even when, can be matters of only temporary adjustment, or they can seriously impair effective teaching and accurate evaluation' (Cazden, 2001, p3). What teachers say and do next is vital.

Wolfe (2006) sought to reveal the meanings of greatest intrinsic value to teachers and their students through examination of the discursive action mediating classroom activities. One outcome of this research was development of a list of strategies through which educationally productive spells of dialogue appeared to be triggered – the 'how' of interaction at a micro level perhaps? These include:

teachers
- asking authentic questions

- using deferring questions to check children's meanings
- pausing to allow children time to i) think and ii) interject and express ideas fully
- adopting a low modality, using words such as 'perhaps' and 'might' as invitation to a range of possible actions
- offering new content relevant to the theme unfolding
- developing a line of argument by staying with one child through a sequence of connected questions
- accepting responses without evaluating them
- engineering opportunities for students to participate actively in the discourses
- building on children's interests

and students
- asking questions and making statements.

Grounded in empirical data, these mechanisms resonate with existing indicators of dialogic teaching (Alexander, 2008b) and it would be tempting to view both as solutions to the challenge of teaching through dialogue. However, they presuppose the existence of at least some of the following features of classroom life:

- Teachers structure learning and facilitate children's active participation in the learning discourses. Cross-curricular links are exploited

- Teachers have sound knowledge of curriculum content and understanding of the issues likely to confuse or challenge children's thinking

- Teachers' questions suit the instructional purpose. Some invoke a range of responses and encourage divergent thinking, others require single word responses. In the chaining of question and answers ideas are developed or modified

- Teachers encourage language production and learning talk through activities that require children to respond in extended utterances. They model language that is comprehensible and/or exceeds what learners are able to produce alone

- Teachers listen and respond to the content of students' utterances, challenging, probing and extending their meanings

- Children are offered constructive and formative feedback on performance

- Visual materials and curriculum resources are selected with care and teachers understand how artifacts i) reflect cultural meanings and ii) mediate learning

- Parties to the discourse live with provisionality and uncertainty

- Turns and speaking rights are evenly distributed. Children initiate in dialogue and at times the teacher withdraws from the floor

- Students are expected to address the public forum in an intelligible and articulate manner and to listen to the substance of each other's contributions.

These criteria are distilled from naturalistic data gathered in primary and early years' classrooms in four schools in one local authority in England over three years. Two of the schools were community schools under measures to improve; the third was a Church of England school located in a small village, and the fourth a Sure Start nursery serving a large urban community. Despite the variety of contexts, there appeared to be a particular distinctiveness about practices in the whole-class settings in which dialogic 'episodes' were observed (Wolfe, 2006, pp258-259).

Yet despite the wealth of research pointing to the way in which contexts and discourses scaffold *children's* learning, there appears to have been little co-ordinated response in the UK to the challenge of scaffolding teachers' understandings of classroom talk, perhaps because it runs counter to the current preoccupation with 'raising standards'. When literacy co-ordinators gathered with consultants in one local authority in 2004 to consider implications for practice of *Speaking, Listening and Learning* materials introduced in 2003 (QCA/DfES, 2003), attendees were *inducted* into techniques intended to promote children's communicative skills and *informed* about drama groups and museum projects. There was little mention of the role of talk for learning generally and few references to the most powerful latent resource at the disposal of schools, the teachers themselves (Wolfe, 2006, p69). Although there are notable exceptions in North Yorkshire, London and elsewhere in the UK, without the understanding and long-term commitment of key players in the system, comprehensive and sustained change at institutional level is difficult to effect. It requires shared values and a strong sense of purpose or vision for the future, factors that apply at every level in the activity structure.

Purpose

Consideration of purpose is clearly important for teachers who want to promote certain kinds of talk in the classroom and spills out at the level of lesson and curriculum unit. In his overview of past research into children's collaborative learning in classrooms, Mercer (1995) alludes to the importance of selecting activities (in his case, a particular computer program) that 'require', rather than merely encourage, sharing of information and joint decision-making. These sentiments are echoed in the work of Gibbons (2002) in the field of second language learning. She suggests 'the best pedagogic tasks involve some kind of *information gap* – that is a situation whereby different members within a group, or individuals in a pair hold different or incomplete information, so that the only way that the task can be completed is for this information to be shared' (2002, pp23-24).

Many primary teachers in England are beginning to create such opportunities by experimenting with different approaches to instruction. Mantle of the Expert (MoE) was devised by education and drama practitioner Dorothy Heathcote (Bolton and Heathcote, 1995). It requires students and their teacher to devise an authentic situation of enquiry in which they act collectively as experts for Heathcote understood the need for a pedagogy that captivates children's interests and enhances deep level thinking. Other schools have begun to adopt the International Primary Curriculum which promotes integrated learning with an international perspective and emphasis on development of knowledge, skills and dispositions that will equip children 'to be good citizens and to respond to the changing contexts of their future lives' (http://www.internationalprimarycurriculum.com/) principles that resonate with Alexander's (2006) concerns about the broader purposes of education. Yet, despite promotion of the skills required for lifelong learning, there remains an expectation that children should acquire 'knowledge, skills and understanding of a broad range of curriculum subjects'. This returns us to consideration of the challenge facing teachers who seek to combine dialogic pedagogies with effective subject teaching.

One of the key challenges for subject teachers especially lies in knowing how to match pedagogical form and content at different stages of instruction (Alexander, 2004; Cazden, 2005). This can again be framed as a question of purpose – dialogue and argumentation are not a panacea for everything but they are effective when used selectively and with clear pedagogic intent. Three decades after Barnes (1976) first addressed these matters, Cazden suggested there was 'too little research showing which educational objectives require more dialogic forms of discourse, and which do not' (2005). Nevertheless, in recent years there have been encouraging developments from the work of researchers in eg mathematics (eg Solomon, 1998, 2008) and science

education (eg Mortimer and Scott, 2003; Scott et al 2006) and in the contexts of computer mediated learning (eg Ravenscroft and McAlister, 2008 in the domains of science, technology and psychology).

Ultimately however, as suggested earlier, a dialogic perspective locates classroom talk in the context of wider institutional, historical and national/international conversations and raises central questions about aims, values and curriculum. We have seen already how in a culture of compliance, advisers at local authority level can impose their version of curriculum matters on groups of teachers through their use of language, what they choose to include and the tone and manner in which ideas are communicated. Nevertheless, the pull towards a discourse that 'permits no play with the context framing it, no play with its borders, no gradual transitions, no spontaneously creative stylising variants on it' (Bakhtin, 1981, p343) is weakening as policy makers and educators respond to new priorities and imperatives.

Directions and possible futures

The logic of 'dialogue' in which knowledge is treated as a temporary fixing of ideas constructed through the interplay of different voices, ensures that classroom communication cannot be separated from consideration of pedagogy and its 'attendant discourse … what one needs to know, and the skills one needs to command, in order to make and justify the many different kinds of decisions of which teaching is constituted' (Alexander, 2004b, p11). However, the challenge for all those promoting dialogic pedagogies lies in the power of these divergent ideas to disrupt ideologies which demand conformity to a central authority and are shored up by authoritative paraphernalia - bodies of knowledge and personnel included. How much greater is the task when governments and their agents focus on raising standards by monitoring and testing the performance of children and teachers against a set of predetermined criteria.

Paradoxically, of course, a culture of compliance can actually undermine the very goals that governments set out to achieve. This review has referred to research that demonstrates how the Literacy and Numeracy strategies (DfEE 1998 and DfEE, 1999) appear to have been counter-productive in terms of promoting higher quality classroom interactions in primary schools in England. These issues are mirrored throughout the system. For instance, there is an apparent tension between the knowledge and understandings required to teach effectively in particular subjects and what trainees in teacher education need to know and do to pass skills tests in Literacy, Numeracy and ICT required by the Training and Development Agency. These tests are high-stakes: measures of the success of a particular course on which the ratings of a university department or institution depend; thus tutors and administrators alike are drawn towards these centralizing forces.

Human action – including verbal action – adapts and adjusts to influences from outside but is also changed from within by the discourses permeating and shaping activities, or so it seems. It also seems unlikely that dialogic pedagogies will root deeply in education under the New Labour government unless there is alignment between goals and values at every level of the activity structure or development of a critical mass of influences likely to upend the *status quo.* Promisingly, this review has drawn attention to the seeding of new ideas and practices and it is valuable to examine these further for their potential to disrupt the current discourse of compliance.

Changing practices and roles

In this review we have seen how promotion of 'exploratory talk' 'dialogue' or 'argumentation' as forms of discourse can encourage teachers and teacher educators to focus on the mechanisms through which these forms of interaction are elicited and

sustained and the conditions in which they thrive (Alexander, 2008b, p52). Attention has also been drawn to the importance of selecting topics or texts that 'facilitate the students' efforts to adopt a critical stance' (Wilson and Laman, 2007). Given the advent of new technologies this applies also to the choice of 'digital tools' (Ravenscroft and McAlister, 2008) - the software and programmes that represent alternative 'text types' and offer new possibilities for supporting development of argumentation and dialogic discourses.

There is also a growing interest in schools in the use of interactive whiteboards (IWBs) to stimulate thinking and productive classroom dialogue through creation of 'shared dialogic spaces' (Wegerif, 2007) in which students might work effectively with structured guidance both on and off the whiteboard. Researchers at the University of Cambridge, Faculty of Education, led by Mercer, are currently involved in an ESRC funded project focusing on the potential of IWBs to support children's collaborative learning (IWBs and collaborative pupil learning in primary science: RG49888, 2007-2008). Given Alexander's insistence that dialogue is understood as part of a wider conceptual framework of pedagogy, it is interesting that another project led by Sara Hennessy is set to explore the orchestration of classroom dialogue incorporating use of the interactive whiteboard (ESRC Research Fellowship: **Bridging practice and research into teaching and learning with technology** RES-063-27-0081, 2007-2009).

Role play and drama also offer 'spaces' for dialogic interactions but of a different kind. They afford teachers and students opportunities to subvert traditional classroom roles and relationships temporarily, thereby reducing the risks involved in passing control of learning to the children themselves. However, teachers are required to work in quite different ways from within the learning community, perhaps as co-participants in authentic acts of inquiry or as 'discourse guides', facilitating children's understanding of ways of thinking and modes of operating associated with a subject domain of discipline. This is particularly challenging for '[i]t requires a conceptual map of what is to be taught, the ability to think laterally within and beyond that map, and an appreciation of where children are 'at' cognitively and what kind of intervention will scaffold their thinking from present to desired understanding' (Alexander, 2008b p50). Location of much of the research into subject teaching and dialogue at secondary level is significant for whilst most secondary teachers are subject specialists, primary teachers - in England at least - tend to be generalists. For them the challenge of mastering pedagogic content knowledge in all subjects is daunting and raises questions about educational priorities and values. Should primary aged children be taught in lessons organised around subjects, or projects organised around themes and promoting generic communication and reasoning skills? If the latter, then how might learning be effectively tracked in a regime concerned with testing measurable objectives?

There is another kind of 'space' that remains to be exploited for its dialogic potential, which occurs in the interaction between children's home and school lives. At one Children's Centre in the South of England, practitioners promote learning driven by children's choices and prior experiences. The programme of 'Continuous and Enhanced Provision' aims to support development of good practice in early years' settings (http://www.earlyexcellence.com/). Its success relies on a co-ordinated network of care professionals, teachers and key-workers, who get to know children and liaise closely with their families. Information flows back and forth between home and school, and children's progress is mapped in 'learning diaries' organised around the areas for learning and development identified in the Early Years Foundation Stage Curriculum, a model perhaps for effective assessment of cross-curricular activities at other stages of education.

These examples are encouraging but are they enough? Throughout this review, it has been suggested that discourse needs to be considered within contexts of classroom communication and pedagogy and ultimately debates about values and culture. One of the hurdles to transformation lies in the nature of our subject. Classroom talk is

ephemeral: unlike the printed word it cannot easily be held up for study by others. Nevertheless access to quality transcriptions of classroom discourse and/or video footage would support the development of all those interested in educating children for tomorrow's world and there are some fruitful advances. Examples of classroom discourse are increasingly available for all those interested in understanding the role of communication in pedagogic processes. These include Alexander's (2001) cross-cultural study, Torrance and Pryor's (1998) book about formative assessment and a forthcoming book of case studies from nine countries across the world (Barnard and Torres-Guzman, 2008). There are also changing models of professional development that augur well for the transformation of discourses at school and classroom level.

In a project under way in secondary schools in the East of England more than 100 teachers are involved in an inquiry set up to critique aspects of their own practice. Their current goal is to explore through video, the challenges of adopting a dialogic pedagogy at a stage of education in which subject teaching is promoted in initial teacher education and CPD courses. The network operates through dialogic principles that resonate with an innovative teacher induction programme offered by the University of Missouri-Columbia in the USA. That programme rests on a view of professional development in which 'universities do not provide the knowledge to teachers nor do teachers rely on only their pragmatic knowledge of teaching. Instead teachers work to create knowledge from their own experiences', a process that 'often occurs through collaboration, inquiry and mentorship' (Gilles and Wilson, 2004, p88).

Pedagogical initiatives

Curricular initiatives in recent years are perhaps indicative of a 'growing belief that the quality of classroom talk is profoundly important and that its character and context need somehow to be transformed' (Alexander, 2008a, p17). Renewal of the Primary and Secondary frameworks (2007) have placed talk centre stage in Literacy and English teaching, and skills of enquiry, participation, communication and 'responsible action' are central to the KS3/4 Citizenship Programme of Study (1999). The most pertinent changes relate to reform of assessment procedures (eg Black and Wiliam, 1998; Black et al 2002). Assessment for Learning (AfL) requires that teachers attend to the quality of classroom dialogue for it is this that creates opportunities for discovering what children know and helping them become better learners, a crucial platform for personalising learning (Hargreaves, 2004). Indeed, in summing up, we might select the prophetic words of David Miliband in which he specified the components of personalised learning. He began by proposing that '[a] personalised offer in education depends on really knowing the strengths and weaknesses of individual students' and continued 'the biggest driver for change is assessment for learning and the use of data and dialogue to diagnose every student's learning needs' (2004, p4).

The AfL Strategy (2008) is a promising indicator of changing times. Nevertheless, as one commentator notes, the emphasis on 'testing' and 'making accurate assessments linked to National Curriculum levels' sidelines relational, pedagogic and pupil responsibility aspects of AfL, the very features associated with dialogic practices. It seems that the challenge of turning rhetoric into practice remains, but can we ignore it any longer? Where once a school's task of transmitting values was relatively clear, now 'the same schools are expected to respond coherently to ethnic and cultural diversity, moral relativism and the loss of individual and collective identity' (Alexander, 2006, p6). There is not only strong pedagogical justification but also clear moral imperative for helping children develop the skills and competences needed to participate effectively in a world beset by problems that require mutual understanding and collective problem-solving. Argumentation and dialogue are not simply alternative patterns of communication; they are principled approaches to pedagogy, as Alexander's model of Dialogic Teaching suggests. The power to change thinking though changing classroom practices and communication should not be ignored.

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