Project title: Teacher-pupil dialogue and the comprehension of literary texts

Award Reference: R000223563

Full Report of Research Activities and Results

Background

The study sought to investigate the quality of teacher-pupil dialogue in the guided reading session of the Literacy Hour and its relationship to pupils’ powers of comprehension. During this part of the hour, the teacher works closely with an ability group on a reading activity, while the rest of the class works independently. A pilot study by the principal applicant showed that discourse in this context sometimes resembled what Bakhtin calls ‘pedagogical dialogue’, in which someone who knows and possesses the truth (the teacher) instructs someone who is ignorant of it and in error (the pupils). In other cases, it resembled Bakhtin’s concept of ‘internally persuasive discourse’, in which pupils retell a story in their own words rather than reciting it by heart (Bakhtin, 1981; Skidmore, 2000). The pilot study suggested that these different patterns of teacher-pupil dialogue had educationally significant consequences for the development of pupils’ powers of comprehension. This suggestion was supported by previous research on the important relationship between oracy and literacy (Marshall, Smagorinsky, & Smith, 1995; Nystrand, 1997; Wells, 1992).

Objectives

1. In a sample of English primary school classrooms, to ascertain the extent to which teacher-pupil ‘closing frame’ discussions of literary texts in the guided reading session of the literacy hour exhibit the properties of pedagogical dialogue and / or internally persuasive discourse.

This objective was addressed by the recording, preparation and analysis of discussions which took place during the guided reading session between teachers and groups of pupils in primary schools. As planned, five schools were visited three times each for data collection, the same teacher and group of pupils being recorded on each occasion. In the event, we decided to set aside the data from one school for the purposes of analysis, because the teacher confided that the discussions we recorded had been rehearsed prior to our visits, despite our request that the discussions should be conducted as normally as possible. Since an aim of the project was to capture classroom discourse under naturalistic conditions, we felt that it would bias our results to include this data in our analysis. Nevertheless, the remaining data set was sufficient to enable the objective of examining discussions across a sample of different classrooms to be fully met.
2. To explore the relationship between pragmatic features of the discourse in this context and its contribution to developing pupils’ powers of comprehension.

This objective was addressed by conducting a combined qualitative and quantitative analysis of the speech data collected. Extracts of discussions from four of the schools were selected for detailed annotation and commentary focusing on (i) pragmatic properties, such as control of turn-taking and the use of non-verbal communication, and (ii) the educational significance of the way the discussion was conducted, such as the nature of teacher questioning and the extent to which pupils were able to introduce their own ideas into the discussion. The results of this analysis are described below.

A full, in-depth analysis of every utterance throughout the corpus was not feasible in the time available, so we reviewed the videotapes of the discussions and identified passages for closer analysis on the basis of analytical themes mentioned in the research proposal (e.g. pupil speculations) and themes emerging from the data e.g. strategies for dealing with pupil attempts to modify the topic. This illustrative qualitative analysis was supplemented by the development of techniques to provide a quantitative overview of a whole discussion (described under ‘Methods’ below). The combination of qualitative illustration and quantitative overview enables us to be confident that our analysis presents a reliable interpretation grounded in verifiable characteristics of the data. This objective was therefore met.

3. To demonstrate an innovative methodology for corpus formation and computer-assisted analysis of naturalistic discourse using the acoustic speech signal as the primary source of evidence.

This objective was addressed through the use of a novel method of recording using a separate minidisk and lapel microphone for each participant in the discussions, and the preparation and analysis of audio-visual data using specialist software (Anvil). We are not aware of any previous use of these methods of data collection and analysis in research into classroom discourse.

We encountered technical problems in the gathering and preparation of data due to differences in recording speed between minidisks. These were managed and overcome as described under ‘Methods’ below. The project met the objective of demonstrating the feasibility of the methodology but suggested that (given the current limitations of the technology) the approach is better suited at present to the capture of shorter samples of speech (of the order of 5-10 minutes’ duration) than lengthy discussions.

**Methods**

*The recordings: settings, procedure and equipment*

The primary data source for the study was audio recordings of teacher-pupil dialogue in the guided reading session. All schools were primary schools within a single urban LEA; the location chosen was between Bath and Reading, where the members of the
research team were based, to keep travelling costs down. The identities of the schools have been disguised in the reporting of the project results; a three letter code is used to identify each school, namely: FND, WTL, STC, KWM and ABM. (Data from STC is excluded from the analysis as explained above under ‘Objectives’.) Each school was visited on three occasions staggered over a six-month period (October 2001, January 2002 and March 2002). The successive visits to record the same group of pupils enabled them and the rest of the class to become familiar with the setting up of the equipment and the recording procedure and both teacher and pupils gradually became more at ease with it as the visits went by.

The recordings, which lasted for 20-30 minutes on each occasion, were of the same group of six children in year 6 (10–11 year old pupils) and their teacher during the guided reading session of the Literacy Hour, with the exception of one recording session in which one of the pupils was absent due to illness (WTL05-03-02). The three members of the research team were present in the classroom during the recordings. Two set up the equipment and oversaw the recordings, and the third assisted the rest of the class with their work while the teacher was conducting the group discussion. With the aim of minimising disruption to the class as much as possible, the team had designed a protocol that allowed us to set up, and dismantle, all the equipment in about 5 minutes. The setting up of equipment took place either before the pupils entered the class or in between activities, for which a break was allowed. All recordings went smoothly and no data was lost. The microphone and minidisk belonging to each speaker were colour coded. A record was kept of which colour each speaker was given so that they could be assigned the same colour in future visits. This allowed us to keep track of the contributions produced by each pupil during successive visits while preserving their confidentiality.

In order to achieve an accurate recording of everything that was going on within the group, an individual recording of each speaker was made on each visit using a lapel microphone and a portable minidisk recorder. This provided a high resolution audio image of speaker utterances and marked a methodological advance over previous research into classroom discourse which has traditionally used a single tape recorder with a multidirectional microphone. Contrary to our expectations and the technical specifications of the equipment, we found that minidisks in fact recorded at slightly different speeds and the resulting individual sound files had to be further processed and stretched to a common length before synchronizing them. Any distortion introduced by this processing is negligible, however, where the focus is on the dynamics of the discussion rather than the acoustic properties of speech. The clarity of the audio signal was very high and enabled the research team to discern such features as ‘asides’ or sotto voce comments made by pupils.

A video camera mounted on a tripod was used to record aspects of non-verbal communication during the discussion. This provided an improvement in accuracy over paper-based observation records, as the video data could be checked after the event to verify points of uncertainty within the data.
Data handling: digitisation, processing and transcription

Each visit resulted in seven concurrent minidisk recordings and one concurrent video recording. This data was digitised to provide computer readable format (MP3 for audio, DivX for video). Each file’s name consists of the three letter code for the school, followed by the colour code of the speaker, and then the date the recording took place. Thus, file KWMgreen06-03-02.mp3 corresponds to the recording of the pupil who was assigned colour green at school KWM on the third visit made on 06 March 2002.

An initial transcription of the individual audio recordings (for each speaker) was made by a trained transcriber. The initial transcriptions were cross-checked and amended by the research team. They were then segmented into utterances and aligned to the audio sample for that speaker. (The operational definition which we adopted in the project is that an utterance consists of the speech continuum from one silence to the next.) In order to add annotations to the data that were observed from the video, we used the software package Anvil (Kipp, 2001). The use of Anvil allowed us to view the video, listen to the merged audio file and follow each individual transcription at the same time. It also allowed the creation and insertion of coding labels describing pragmatic and educational features of the data.

Results

Qualitative analysis

The examples referred to in this section are included in Annex 1 (Transcripts).

Teacher questioning

A clear educational indicator of the degree of openness of the discourse is the pattern of teacher questioning and pupil response. Our analysis distinguished three degrees of freedom accorded to pupils by teacher questioning in the discussions we recorded: questions with one right answer; those with a finite set of acceptable answers; and those with an indeterminate, though bounded, set of possible answers.

1. One right answer

See Transcript 1, ABM15-01-02, line 3: ‘Can you find for me a word that means predicted?’

This is an example of the closed or test question which previous research has identified as characteristic of much classroom discourse – a question to which the teacher already knows the answer (Barnes, 1976). The phrasing of the question makes it clear that the teacher has one and only one correct answer in mind, and this is reinforced by her prompt (line 6): ‘it’s quite near the top’. By its nature, the question invites a one-word answer with minimal elaboration from one pupil. It also provides an example of the IRE sequence (Initiation-Response-Evaluation) when the teacher verbally ‘marks’ the pupil’s answer as correct (ll. 18-19: ‘yes / that was good’). Only one pupil (Green) takes part in the exchange. It is noteworthy that the majority of the
exchanges in our samples were of this form, i.e. dyadic exchanges between the
teacher and one of the pupils; examples of the ‘chaining’ of pupil utterances, in which
one pupil follows another in building a group interaction, were rare.

2. A finite set of right answers

See Transcript 2, WST06-11-01, ll. 6-7: ‘see if you can pick out the verbs that
Michelle McGorian uses / to show us Willy’s character’.

The teacher’s instruction here initiates a task which has a more open and more
cognitively challenging quality than in the first example. The pupils are still asked to
locate specific words in the text, but this time there is more than one item to be found,
and they must conform both to a grammatical constraint (verbs) and a semantic-
aesthetic constraint (demonstrative of character). This elicits a longer exchange to
which four different pupils contribute, three of them making more than one
contribution during the sequence. There is no chaining of pupil turns, which are
separated from each other by teacher interventions, but their contributions are
distributed quite evenly through the sequence, giving it more of a collective, shared
quality than Transcript 1. The teacher’s initiation remains a variant of the test or
display question, since it is clear that she has a definite list of appropriate answers in
mind; however, she shows some flexibility in defining the parameters of the task by
accepting an answer from one pupil which comes from a later passage in the text (ll.
29-36: ‘Oh I haven’t got there … OK’). The pupil’s turns are longer than in the first
example, consisting of phrases rather than individual words, and in some cases of a
series of utterances linked together to form a fuller, more self-contained contribution.
The nature of the instruction means that they are mainly confined to reciting from the
text, though in one instance a pupil explicitly offers an interpretation of the passage
which he quotes, explaining his understanding of how it helps to portray Willy’s
character (Blue, ll. 78-83): ‘I think I’ve got one which is / trying to tell you / that he’s
quiet / because it says …’). Here we see the pupil beginning to articulate his
reasoning by paraphrasing and commenting on the significance of the written text –
the beginnings of retelling the story in his own words, rather than merely reciting it by
heart.

3. An indeterminate though bounded set of possible answers

See Transcript 3, FND23-10-01, l. 2; ‘How did you feel when you saw the pictures of
the towers collapsing?’

This example, in which the pupils are asked to discuss how they felt after watching
television reports of the attacks on the World Trade Centre on September 11th, does
not conform strictly to the guidelines of the guided reading session, but acts as a kind
of bridge between reading which the class had previously done (a newspaper report of
the event) and a guided writing activity. (The pupils were preparing to write their own
‘recount’.) We have included it in our analysis because it represents a valid group
discussion task within the framework of the Literacy Hour, and because it generated
the most open example of dialogue in our data.
The teacher’s question here is authentic in the sense that she does not know in advance what answers the pupils will give, though it does specify a semantic domain (words to do with feelings) within which appropriate responses must fall. There is no text to recite here, so the pupils are thrown back on their own linguistic resources; understanding that this is not a ‘test’ question seems to open up the texture of the dialogue and encourage the pupils to volunteer their contributions, for the most part without needing to be nominated by the teacher. All six pupils participate in the exchange, most of them contributing more than once at different moments in the discussion, resulting in a longer episode of collective interaction than in the previous examples. There are examples of extended turns in which a pupil ‘holds the floor’ and builds up a contribution over a sequence of several connected utterances (e.g. Blue, ll. 13-19). This instance also shows the pupil making his reasoning explicit (‘I felt quite horrified because …’) and using temporal phrases to develop a miniature narrative of his own remembered experience (‘one minute … the next minute …’). There is an incipient example of chaining when one pupil responds to another’s comment (ll. 94-95 ‘Wembley and that’/ ‘Wembley yeah’), though at this point the teacher intervenes to enforce turn-taking. The teacher defines the topic (how you felt) and reinforces this by gently rejecting one pupil’s contribution as being concerned with what he saw (ll. 67-70 ‘but how you were feeling that’s what we’re talking about at the moment’). However, later in the discussion she accepts another contribution as relevant which modifies the topic but remains sufficiently close to the agenda she has set (ll. 101-103 ‘you were imagining what / else would happen … that’s kind of talking about how you were feeling’). This is an example of ‘uptake’ in which the teacher incorporates a student idea into the flow of the discussion. This exchange, then, comes closest to the characteristics of internally persuasive discourse out of the extracts we have analysed in detail, in that the pupils are invited to articulate their responses in their own words; the parameters of relevance, however, are defined by the teacher, though she permits some permeability in the course of the discussion.

**Turn-taking**

The video recordings we made of the discussions proved particularly useful in examining the role of non-verbal communication in managing turn-taking. They revealed that pupil self-selection is rare (i.e. when a pupil takes the floor and begins talking immediately after the previous speaker finishes). In contrast to everyday conversation, pupils must normally bid for a turn, usually by raising their hand and waiting to be nominated by the teacher. After finishing her turn, the teacher may occasionally wait for one of the pupils to speak up, but this is unusual. More often the teacher nominates the next speaker by name (e.g. Transcript 6), by a look, or sometimes by pointing. Moreover, the teacher may nominate a pupil whether or not they have bid for a turn. The teacher may select a speaker according to her mental record of who has not yet spoken or has spoken less than other pupils; or according to a given order of participation which she has in mind (e.g. Transcript 7, where she ignores three pupils who have their hands raised and chooses another pupil who is next in the order of participation she has established: ‘let’s just hear / about what other people were doing’). Pupils show by the timing of their bids that they are aware of ‘Transition Relevant Points’, i.e. points where it is appropriate for them to enter the discussion, and have internalised the rules of turn-taking in the classroom. However,
the teacher has preference in keeping the floor and may decide to ignore a pupil’s self-nomination in favour of prolonging her own contribution. For example, in Transcript 8, at the end of the teacher’s Turn Constructional Unit (l. 7), Black raises his arm to indicate he wishes to contribute – a possible transition point; but the teacher chooses to continue with her comments addressed to another pupil (Yellow).

The methods for managing turn-taking revealed by our video evidence suggest that the norms of whole-class discussion, in which pupils bid for turns and wait to be nominated by the teacher, are internalised by teachers and pupils and carried over into the small group setting of the guided reading session and govern the dynamic of participation here too. This means that the teacher can ensure that everyone makes a contribution to the discussion, but reduces the likelihood of direct pupil-to-pupil exchanges.

Pupil modification of the topic

A final qualitative indicator of the texture of discussion is control of the topic. Our analysis indicated that the teacher might allow a certain degree of latitude for pupils to modify the topic, but always had the final word over what was defined as relevant. They dealt with pupil attempts to modify the topic sometimes by putting a damper on the intervention, and sometimes by developing the idea for a limited time, but we found no examples of the teacher abandoning their own topic to pursue at length an idea introduced by a pupil.

1. Putting a damper on the intervention

See Transcript 9, ABM12-03-02, l.6: ‘We don’t know that though do we’. Here one pupil (Blue) bids for a turn and introduces a new topic, namely why a character in the story cannot be a ghost. The teacher responds by challenging the pupil’s speculative reasoning; several of the other pupils then intervene to give their views on the topic, referring to evidence elsewhere in the story (l. 12), an illustration in the book (l. 23), and appealing to general knowledge (l. 27). These are all useful comprehension practices (ways of making sense of ambiguities and uncertainties in the written text), and Blue’s comment seems to have sparked the group’s interest and produced a moment of dialectic between the pupils in which they join in ‘exploratory talk’, challenging and probing each other’s reasoning as they engage in a joint search for meaning in what they have read. The teacher, though, seems uncomfortable with the way the discussion is going and tries to leave the topic behind (l. 32). Another pupil tries to give his point of view on the ghost topic (Green, l. 41 ff.), but is met by the teacher intervening to enforce turn-taking. Finally when Blue raises the topic again, signalling that he has changed his mind during the discussion (l. 52), the teacher dismisses the topic and moves the group on to another activity. Although it is reasonable for the teacher to remind the pupils not to interrupt each other at this point, one is left with a sense of an opportunity lost when the pupils’ own ideas about the story are ‘cooled out’ of the discussion.

2. Developing the idea for a limited time
See Transcript 10, ABM19-02-02, l. 3: ‘I’ve got a comment …’. Here the teacher accepts an offer by one of the pupils (Blue) to volunteer his opinion about one of the characters in the story. Blue’s comment expresses an ethical judgement on the character’s conduct, which prompts the teacher to expand on the point, linking it with their shared experience of the social world (parent-child relationships and ‘pester power’). This is an example of the teacher being prepared to digress from her own agenda and incorporate an idea from the pupil into the flux of the discussion. The teacher also models the tentative, unfinalised quality of the inner dialogue of comprehension which is an important part of learning to respond to literary texts (ll. 11, 20): ‘I think that sometimes when …’, ‘But sometimes too do you think …’. This might have provided an opportunity to hear other pupils’ views on the character in the light of their own experiences, but the teacher opts to close the topic at this point and move on without inviting further comments.

**Quantitative analysis**

In this section, we present examples of the quantitative indicators which we developed to help us characterise the patterns of dialogue in our data, and a commentary which explains the significance of the differences between the speakers which can be observed in the graphs. Throughout, each pupil is depicted with the colour that they were assigned for the recording sessions in this school. The teacher’s colour is Grey. All graphs correspond to data from the same visit, namely FND23-10-01.

**Mean utterance length**

![Mean utterance length chart]
We can see from this graph how the teacher’s utterances are longer than those of the pupils. Most pupils average between 3 and 4 words per utterance, while the teacher constructs utterances with an average of almost 6 words. One of the pupils, Gold, clearly shows a pattern contrasting with the rest of her classmates. A qualitative inspection of her contributions reveals that the low number of words per utterance is due to the fact that she produced a large number of one-word answers and backchannelling sounds to show the teacher she was following her explanations.

**Amount of talk by words**

This pie chart shows the relative amount of words produced by each speaker and indicates who does the most talking. It can be seen that the teacher (Grey) produces almost half of the speech in the discussion, whereas the pupils are broadly similar in the amount of talk they produce, with the exception of Black who says relatively little. It is noticeable that Gold, who produced very short utterances and thus presented the lowest score in the previous graph, here produces higher results than some other pupils such as Black or Yellow. Gold thus produced lots of speech but her contributions were mostly one-word answers rather than longer elaborations.
This pie chart shows the relative amount of utterances produced by each speaker and gives an indication of the frequency with which each speaker contributes to the conversation (as opposed to the amount of speech they actually produce). Whereas the previous figure indicates that the teacher does most of the talking, this graph shows that she does not in fact speak significantly more times than the pupils; it is just that the teacher’s interventions are longer and more elaborated, thus consisting of more words.

In this case, Gold can be seen to contribute very frequently to the discussion, but (as indicated by the previous graphs) produces many very short utterances, such as “yeah”, “ok”, “right”, in response to what others are saying. Gold thus says about as much as other pupils reckoned in terms of the number of words she produces, but these consist of many minimal, unelaborated comments. From an educational point of view, this looks like a tokenistic participation strategy, and might point to the need for the teacher to challenge the pupil to expand on her comments. The graph also confirms the impression of the previous figure that Black makes little contribution to the discussion, producing only a small number of short utterances.
**Rate of speech**

This figure shows the rate at which each speaker proceeds through their contributions to the conversation. The X-axis represents the timeline of the conversation (in seconds). The Y-Axis represents the percentage of that speaker’s total speech (in terms of number of words). A point on a line shows the percentage of that speaker’s total contribution to the conversation produced up to a given moment. When a speaker is not talking the line will be horizontal, and will rise (towards 100%) whenever the speaker talks.

The smooth diagonally rising line in grey enables us to see that the teacher speaks continuously and consistently throughout the duration of the discussion. The jerkiness of Black’s line confirms his exclusion from the talk, demonstrating that he speaks only intermittently at widely separated intervals. A round robin pattern of turn taking can be observed at the beginning of the conversation, where the pupils enter the discussion one after another, which becomes less ordered as the discussion progresses. The graph also illustrates that the extent of a pupil’s active involvement in the discussion can vary at different times; Red, for instance, becoming progressively more involved about half-way through the discussion, after a relatively slow start.

**Conclusions**

Our analysis of the evidence from our study suggests that teacher-pupil dialogue in the guided reading session of the Literacy Hour tends to resemble ‘pedagogical
dialogue’, in which someone who knows and possesses the truth instructs someone who is ignorant of it and in error, more closely than ‘internally persuasive discourse’, in which pupils retell a story in their own words rather than reciting it by heart. The teacher:

- does most of the talking;
- rarely asks authentic questions;
- normally controls turn-taking by nominating the next speaker; and
- keeps a tight grip on the topic of conversation.

Within this general picture, however, there are different degrees of freedom allowed to pupils where the talk departs from the teacher-controlled norm. The teacher always produced more speech than any of the pupils in the recording sessions we analysed. But there were cases of questions with multiple possible answers and questions with an indeterminate number of possible answers, within boundaries monitored by the teacher. ‘Chaining’ of pupil contributions, in which their comments follow directly on from one another without being mediated by the teacher, was infrequent, but teachers exercised their control of turn-taking to try to ensure that all pupils had chance to have their voice heard at some point in the discussion. It was perhaps in their response to pupil attempts to modify the topic that teachers exercised strongest control over these dialogues. Teachers might be prepared to digress from their agenda to incorporate pupils’ ideas for a time, but insisted on defining the parameters of relevance which governed admissible topics for discussion. On our evidence, in this part of the Literacy Hour the space for pupils to articulate and develop their own ideas about what they have read is limited. Previous research has indicated the close relationship between oracy and literacy, and in particular has highlighted the importance for developing pupils’ individual powers of comprehension of actively participating in a collective search for meaning in the text (Nystrand, 1997). Our findings suggest that it may be timely to re-examine the conduct of discussions in the Literacy Hour, which government guidance advises should be teacher-led. There may be a case for relaxing the teacher’s directing influence over the talk for part of the session, and allotting time for pupils to formulate and explore their own understandings of what they have read, in their own words.

**Activities**

1. Dialogue and Understanding in the Classroom – KS2/3

This dissemination conference was held at the University of Bath on 2nd July 2002. The audience consisted of teachers from the schools which participated in the research, other local schools and authorities, and research students from the Department of Education. Presentations were made by members of the project team, and delegates were invited to comment on a draft project report.

3. Research seminars were also held at: the Department of Linguistics, University of Reading (May 2002); the Department of Education, University of Bath (June 2002); and the School of Education, University of Cambridge (July 2002).

**Outputs**

1. Skidmore, D. Teacher-pupil dialogue in the guided reading session. Submitted to: Reading, Literacy and Language (Invited article for special issue on ‘Literacy and interaction’).

2. An archive of text-format data files (including a set of transcripts) relating to the project has been established on the project website:

   http://briefcase.yahoo.com/esrcproject

   Username: esrcproject; password: project

3. A machine-readable copy of the dataset arising from the award is in the process of being offered for deposit with the ESRC Data Archive.

**Impacts**

The award holder has been invited to visit the University of Malmö, Sweden, as a guest lecturer in autumn 2003 to speak about the research. He has also been invited to give a keynote address to a conference for teachers organised by LEAs in the southwest of England in summer 2003.

**Future Research Priorities**

There is scope to extend the detailed qualitative analysis of extracts which was accomplished in the lifetime of the project to the full data set. The quantitative indices of participation presented in the ‘Findings’ section created particular interest among practitioners in the dissemination conference, and there is potential for these to be applied to monitoring pupil contributions to oral work in the classroom in other curricular contexts.

The study also raised theoretical questions about ‘addressivity’ in teacher-pupil dialogue which go beyond the scope of the research objectives identified in the proposal (Bakhtin, 1986). In brief, the speech data suggested that teacher utterances tended to be addressed to the group of pupils at large (one person speaking to many), whereas pupil utterances were addressed directly to the teacher (one person speaking to another). Future research could usefully test the validity of this observation and, if
it is substantiated, explore the effects of this asymmetry on the repertoire of oral language skills which pupils are encouraged to practise in teacher-pupil dialogue.

References


