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Helping children to talk and think together more effectively

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ABSTRACT: This paper is based on recent and continuing research by the author and colleagues at the Open University, carried out in British primary schools. It describes how classroom based research has enabled the development and testing of a programme of activities for structuring and resourcing children's collaborative work, and so developing their skills in reasoning and using spoken language. The research is based on a sociocultural perspective on teaching and learning, and the results obtained provide empirical support for a Vygotskian conception of both the relationship between language and thinking and the role of the teacher in 'scaffolding' children's educational development.
KEY-WORDS: sociocultural perspective, language, thinking,

RESUMO: Este artigo baseia-se em pesquisa recente e em andamento realizada pelo autor e colegas da Open University em escolas britânicas de ensino primário. Descreve como a pesquisa de sala de aula propicia o desenvolvimento e a avaliação de um programa de atividades para reestruturar e fomentar o trabalho colaborativo das crianças e assim desenvolver suas habilidades

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em argumentação e uso da linguagem falada. Esta pesquisa insere-se na perspectiva sociocultural de ensino e aprendizagem e os resultados obtidos fornecem apoio empírico a uma concepção Vygotskiana ao relacionamento entre linguagem e pensamento e ao papel do professor em propiciar andaimes para o desenvolvimento intelectual da criança.
PALAVRAS-CHAVE: linguagem, pensamento, perspectiva sociocultural

1. Introduction: Language, communication and education

Language enables us to interact in many different ways, and this is reflected in the variety of registers and genres of language. Back in the early part of the twentieth century, Language was described by the Russian psychologist L.S.Vygotsky (1987, originally 1934) as a 'cultural tool', which enables us to construct and maintain social life. More recently, researchers such as Gordon Wells (1999) have suggested that it is more appropriate to describe it as a 'cultural toolkit', because of the range of functional forms that any language takes. But even that image is inadequate in one sense, as a language does not simply exist as a fixed set of tools for communicating; it provides the resources from which specific communicative tools can be made. This is the essence of a sociocultural approach to education and the development of language and thinking

2. The quality of talk and joint activity in classrooms

Since the early 1990's, I have been involved with colleagues Rupert Wegerif, Lyn Dawes and others in school-based sociocultural research aimed at understanding and assisting the development of children's skills in using language as a tool for problem solving and learning. In its initial stages, our research was strongly influenced by classroom-based studies which suggested that primary school children often lacked a clear understanding of what the purposes of group-based discussion

activities were and of how they might work effectively together in them. One reason seemed to be that teachers rarely made their expectations for such activities explicit, perhaps assuming that this was self-evident to pupils (Edwards and Mercer, 1987). The need for teachers to provide some guidance became apparent. In what was one of the first systematic reviews of studies of group work in primary classrooms, the British researchers Galton and Williamson concluded: 'For successful collaboration to take place, pupils need to be taught how to collaborate so that they have a clear idea of what is expected of them' (Galton and Williamson, 1992, p. 43).

Much earlier, the pioneering classroom researchers Barnes and Todd (1977) had suggested that pupils engaged in joint tasks such as reading comprehension and problem-solving should be encouraged to make their ideas explicit in ways that would not normally be required in 'everyday' discourse. They should be helped to recognize the need for sharing all relevant information, explaining their opinions clearly and with justification, and for examining each other's opinions and explanations critically. In other words, in such discussions knowledge should be made publicly accountable. Barnes and Todd (1995) argue that the successful pursuit of educational activity through group work depends on this kind of communication, and on participants having a joint conception of what they are trying to achieve by it. (See also Hoyles, Sutherland and Healy, 1990.)

3. Educational ground rules

The notion of 'educational ground rules', as introduced by myself and Derek Edwards (Edwards & Mercer, 1987) is also relevant for understanding how talk and written language are used in school. We used this term to describe the implicit norms which govern the spoken interactions between teachers and pupils, and which generate its familiar and distinctive patterns. Drawing on this idea in their study of writing in British secondary schools, Sheeran and Barnes (1991) showed how many of the

expectations that teachers had about what constitutes a satisfactory essay, scientific report or other kind of written work were never made explicit to pupils. And even when some of those requirements were made clear, teachers rarely discussed with pupils why they were expected to write (or talk) in particular ways. Sheeran and Barnes therefore concluded: 'In spite of their importance, these tacit expectations or ground rules are seldom discussed with pupils, because the teachers themselves are largely unaware of them.' (1991: 2).

4. Exploratory talk

One of the main aims of our early research on 'thinking together' was to bring to the surface the tacit expectations or 'ground rules' about how language is expected to be used in schools, and what children are meant to be learning to do with it. One way we did this was to ask teachers involved in our research to make explicit their views about how they would like children to talk in joint activities. From their responses – which showed a remarkable consensus – and from the results of other relevant research (such as that of Barnes and Todd, 1978, 1995; Norman, 1992) we attempted to define a kind of talk which would be good for solving intellectual problems and advancing understanding. Following Barnes and Todd, we called this Exploratory Talk. Our most recent definition of this is as follows:

Exploratory talk is that in which partners engage critically but constructively with each other's ideas. Relevant information is offered for joint consideration. Proposals may be challenged and counter-challenged, but if so reasons are given and alternatives are offered. Agreement is sought as a basis for joint progress. Knowledge is made publicly accountable and reasoning is visible in the talk. (Mercer, 2000: 98).

We also aimed to describe conditions which would be favourable for the emergence of exploratory talk in joint educational activities (at the computer and elsewhere). Our investigations suggested that the following conditions were important:

(i) partners must need to talk to do the task, so their conversation is not merely an incidental accompaniment to it;

(ii) the activity should be designed to encourage co-operation, rather than competition, between partners.

(iii) partners should have a good, shared understanding of the point and purpose of the activity;

(iv) partners should have some 'meta-awareness' of how talk can be used effectively for sharing ideas and solving problems.

5. The Thinking Together research

Over more than a decade, my colleagues and I have been working closely with teachers to implement the ideas described above and to evaluate them through a series of 'action research' projects, in which children and their teachers engaged in specially-designed activities. We have described this 'Thinking Together' research in more detail elsewhere (For example, Mercer, Wegerif, & Dawes, 1999; Wegerif, Mercer and Dawes, 1999), but in summary the procedure has been as follows. Researchers first engage in professional development sessions with teachers, in which the notions of Exploratory Talk and 'ground rules' are made explicit and discussed. This way of talking is then introduced by teachers to their class, with teachers 'modelling' that kind of talk, and each class defining their own 'customised' set of ground rules for use in their discussions. An example is provided as Figure 1 below. The children then pursue the rest of the specially designed programme of over a period of no less than 10 weeks. These Thinking Together lessons (now published as Dawes, Mercer and Wegerif, 2000) have a consistent format in which teacher-led sessions and group-based activities are integrated, and in which the content of activities is directly related to various subjects of the prescribed school curriculum. Researchers make observations of classroom activity throughout this process, as well as taking pre- and post-involvement measures of children's capabilities in language use and in reasoning.

Figure 1: Ground Rules for Talk from one primary class

- All relevant information is shared
- People give reasons for their ideas and opinions
- People can challenge one another's proposals (if they feel they have good reason)
- Alternatives are discussed before a decision is taken
- All in the group are encouraged to speak by other group members
- The group seeks to reach agreement, and takes joint responsibility for decisions

6. Talk in the curriculum

We have aimed not only to help children become more effective at talking and reasoning together, but also to help them apply their skills in communicating and reasoning to their study of curriculum subjects – maths, science, English literacy and so on. I will illustrate this approach first with an example related to both the study of science and to literacy development, as it involves group-based talk concerned with the comprehension and production of a written text about a science topic. In Transcript 1 below, the children involved are aged 10 and 11. Having participated in our Thinking Together programme for some weeks, they have already had some teacher guidance on talking effectively together and undertaken group activities in which they have practised using Exploratory Talk. As part of their normal literacy curriculum, the children are expected to become skilled in comprehending factual texts and producing summaries of them. In this activity – which is not computer-based- the teacher asks the group to find key words in a text and use them in creating a summary of the text. The text is about 'Goosebumps' (the response of hair follicles to a cold stimulus) and is related both to the literacy curriculum and to their Life Science curriculum. At the point the transcript begins, the children are reading the first part of the text aloud. They are involved in what Heath (1983) and Street (1983) call a 'literacy event' – a social event which is focused on a piece of written language. We can therefore consider

the transcript as an illustration of how the pupils enact 'being literate' through the use of spoken language.

All read together: Transcript 1: Goosebumps

'Goosebumps are trying to keep you warm. You belong to a group of animals called mammals. All mammals can feed their babies with milk. Mammals don't have feathers or scales - they have skin with hair or fur. Hair keeps you warm. It does this by holding a warm layer of air next to the skin. When any furry mammals get cold the hairs stand on end - that makes the hair hold even more air, keeping the warmth in.'

'You wear clothes to keep you warm but your skin and hair work just like any other mammal. The hair you do have even though there isn't much of it can stand on end to hold air and keep you warm. The bumps of goosebumps are where you can see this happening at the roots of the hair.'

Becky: I know where the roots of the hair is - I can feel a little dot. I can see where I pulled out a hair.

[The boys examine their arms for hairs]

Michael: Talking points for each paragraph. Decide - 'What are the three most important words?'

Yasmin: We should do that one first

Michael: Yes - we can do one each. What are the three most important words. Do you want me to go first. I think the three most important words in paragraph one are:

Yasmin: Goosebumps.

Michael: Goosebumps, mammals.

Damien: And hair.

Becky: And hair like it stands on end.
Michael: And hair - cos they are used the most they are important
Becky: That's the most in here because it's about goosebumps that you get on your arm isn't it so – goosebump.
Yasmin: I say goosebumps, mammals and hair.
Becky: I say ...
Damien: I think it's probably skin, hair and mammals.
Becky: Yes skin, hair cos your hair stands on end and mammals.
Damien: Yes cos look they're talking about scales and
Michael: Mammals. Do you think it's mammals, hair and air?
Becky: It could be.
Michael: It could be the three most important words because that gets used the most. I think it could be mammals, hair and air.
Yasmin: I agree
Damien: I agree.
Becky: I agree.
Michael: Why?
Becky: I agree because over here it says air. What are the most important words and air is the most -right?
Michael: That's alright. S'all right, s'all right.
Damien: I agree cos like - everyone's got hair and it traps the air and you need the air to keep warm.
Michael: Has everyone given a reason?

Comment

The members of the group begin by reading through the text aloud. They then begin to discuss their choice of three key words, providing some reasons for the suggestions they offer. Michael acts as 'chair', ensuring that everyone is included (for example by saying 'Second – Damien'). He also points out that the task is more complex than they have assumed - that they are expected to find words for each paragraph. The group consolidate

their agreement. Michael checks that they have all given a reason, and Becky tries to elicit a reason from Yasmin (who is rather reticent throughout the activity). Some disagreement is expressed; for example Michael disagrees with Becky's suggestion and gives a reason for this. They seek participation by members and so seem concerned about Yasmin's reticence; they give reasons for their choices; they talk for some time about each question; and they consolidate their developing shared knowledge. In general terms, they follow the ground rules that they have agreed on with their teacher - and so generate a discussion which has some of the key features of Expoloratory Talk.

7. 'Kate's Choice': an interactive moral tale

We have also created some computer-based, literacy-related activities in which children can practice and develop their skills in talking and thinking together. One of the research team, Dr Rupert Wegerif, designed a program called 'Kate's Choice' - an interactive narrative with a moral education/citizenship focus, which is designed to elicit Exploratory Talk. Basically, the program introduces children to a girl called Kate, whose best friend Robert tells her a secret; he has stolen a box of chocolates from a shop near their school. He says that they are for his mother who is in hospital. Robert begs Kate not to 'tell'. She agrees, but subsequent events make it difficult for her to decide whether this promise should be kept. At each stage, the children (working in groups of three) are asked to help Kate resolve her moral dilemma. One frame from Kate's Choice is shown as Figure 1. The phrase 'Talk together about what Kate should do' on the computer screen prompts the children to talk about the alternative choices presented. For children who have been involved in the Thinking Together project, the words 'talk together' are expected to cue the use of the ground rules for talk established in earlier sessions, as described earlier.

The content of Kate's Choice relates to the citizenship curriculum for primary schools in the UK, which emphasizes the importance of discussion and of considering the perspectives of

others in making moral decisions. More precisely, the software task stimulates talk about the conflict between personal morality (loyalty to a friend) and social morality (stealing is a crime). At each of several stages in the narrative, the children are asked to consider the relevant information at their disposal, and the points of view of each of the characters involved, before coming to a decision and proposing wha should happen next. So although the content is focused on citizenship issues, success in the task involves the effective use of various kinds of language skills. Literate skills are required in reading the narrative, appreciating the perspectives of the characters involves, and projecting the narrative forward along hypothetical routes which would arise from each possible choice Kate could make; and oral skills are required in making proposals, presenting reasons, listening to the views of others and resolving different points of view. Taking a sociocultural perspective, our hypothesis was if children participated in the task on the basis of appropriate 'ground rules' for talk, there would be good opportunities for them to practice these language skills and to learn new and effective ways of using language and ways of reasoning from their partners.

8. Evaluating the Thinking Together Programme

An important aaspect of our research was to make an assessment of whether carrying out the Thinking Together activities changed children's talk and reasoning in the ways we intended. More precisely, we wished to compare the way that children in our 'target classes' (who undertook activities having become familiar with the 'ground rules' through participating in the Thinking Together programme) compared with children in control classes in similar schools (matched for aspects of social catchment) who were given the same activities without any special preparation for discussion. Mixed ability and mixed gender groups of Year 5 children (age 10-11 years) in target and control classes were therefore observed and video recorded carrying out Kate's Choice and other curriculum-related activities.

We were able to show that the talk of the target-class groups exhibited significantly more of the following features than did the talk of control groups. Children…

- …asked each other task-focused questions;
- …gave reasons for statements and challenges;
- …considered more than one possible position before making a decision;
- …elicited opinions from all in the group;
- …reached agreement before acting.

In contrast, the talk of control groups showed more of the following features:

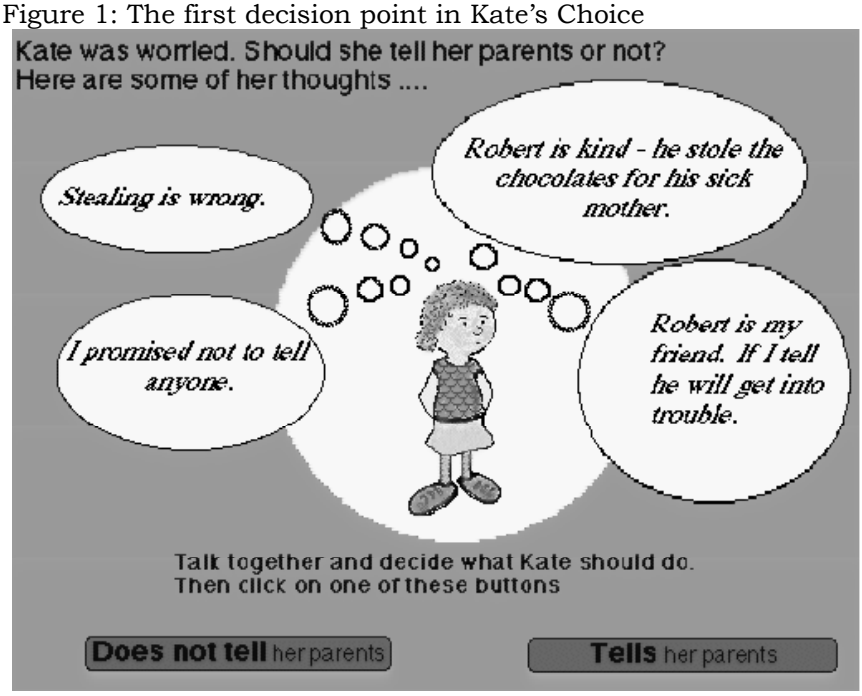
- the choice of the most dominant child was accepted without discussion;
- children only took short turns at talking;
- arbitrary decisions were made without debating the alternatives
- children spent very little time at each decision point before moving on.

Moreover, over the period of studying Thinking Together programme, the members of ther 'target' classes who followed it the improved their scores on the Raven's Progessive Matrices test (a standardized test of non-verbal reasoning) significantly more than the children in the matched 'control' classes (See Mercer, Wegerif and Dawes, 1999, for more detail about this evaluation and the statistical results obtained.) We were able to conclude, therefore, that the Thinking Together programme had achieved its intended effects of encouraged more effective use of language as a tool for reasoning.

An analysis of children's talk while carrying out the Kate's Choice computer-based activity provided good comparative illustrations of the ways the 'target' and 'control' groups responded to a similar task. Target groups responded to the talk prompts provided by the software as an opportunity to engage

with one another's ideas through Exploratory Talk. They also tended to spend much longer at each stage of the narrative as they considered the issues in more detail and made reasoned choices. The software was used by the children as a tool for thinking together, and not as a game in which speed of response is important. It supported pupils' engagement with one another's ideas and opinions in their IDRF exchanges, whilst becoming itself less 'visible'. (See Wegerif and Dawes, 1998, for a discussion of the characteristics of such tasks.)

Figure 1: The first decision point in Kate's Choice



The following transcripts (Transcripts 2 and 3) illustrate typical differences between the discussions of the target and control class children. They are both taken from the first decision point encountered in the program (Figure 1, above). This was the main decision point in the software and so was used to make

systematic comparisons between the target and control conditions. Transcript 2 is an extract from the discussion of a target class group (who have had several weeks' involvement in Thinking Together activities).

Transcript 2: What do you think?

Gary:	Right we've got to talk about it. (T looks at S)
Trish:	What do you think? (T points at G)
Sue:	What do you think?
Gary:	I think even though he is her friend then um she shouldn't tell of him because em well she should tell of him em because was, was, if he's stealing it it's not worth having a friend that steals is it?
Trish:	No
Sue:	Why do you think that?
Trish:	We said why I think that one as well do you? (T points to the screen and looks at S)
Gary:	I think she should tell her parents Do you? (G looks at S)
Trish:	I think I'm I think even though he is her friend because he's stealing she should still tell her parents and her parents might give her the money and she might be able to go to the shop and give them the money
Sue:	I think um …
Gary:	… but then she's paying for the thing she stole so I think he should get the money anyway. He should have his …
Sue:	I think that he should go and tell his mother.
Gary:	… own money Mum
Trish:	Even though she has promised
Sue:	Because he's well you shouldn't break a promise really should you?
Gary:	What's it worth having a friend if he's going to steal?

Trish: If he steals If you know he's stolen if she don't tell her parents then he will be getting away with it (T looking at S)
Gary: It's not worth having a friend that steals is it?
(3 second pause)
Sue: OK then (S puts hand on mouse)
Trish: Ain't worth it is it?
Sue: Tells her parents
Sue: (clicks mouse)
Gary: Yeh go on
(Total time: 109 seconds)

Comment

Here the children ask each other for their views and reasons to support them. They appear to consider alternatives carefully before taking a shared decision. They can be seen to be implementing their agreed ground rules for talk. This is not perfect Exploratory Talk; few extra reasons are given in support of the initial position taken by Gary, and it is hard to tell if Sue is persuaded by the reasoning or merely acquiesces to the strength of the majority view. But this discussion has some key features of Exploratory Talk.

Transcript 3 is the talk of a control group who have reached the same stage of Kate's Choice as the target group in Transcript 2.

Transcript 3: Do That

Jared: (Reads from screen) 'Talk together and decide what Kate should do then click on one of the buttons.'
Tony: What should we do?
Jared: Do that. (Jared points at the screen)
Tony: (Turning to call the teacher) Excuse me. (Turning back to group) We don't know what to do.
Effie: (Clicks mouse)
Jared: Yes we do.
(Total time: 42 seconds)

Comment

None of the group perceive any real meaning in the computer prompt, 'talk together'. Effie, who happened to have the mouse, decided the choice for the group. This assumption of control goes unchallenged and the group move rapidly through the task rather than really considering the moral issues of the narrative. The opportunity to discover and consider each other's ideas is not pursued.

A comparison of the target and control group's discussions has some implications for how a task such as this might feed into subsequent writing assignments for the children involved. Asked to write an ending to the narrative, the members of the target group would each have of the 'common knowledge' of their discussion as a literary resource. Members of the control group, however, would have gained little such resource from their interaction.

9. Exploratory Talk 'on-line'

In the most recent phase of our research, organized by team member Manuel Fernandez (Fernandez, 2001) , children in two schools in Milton Keynes have moved on to applying their 'interthinking' skills when communicating at a distance to other children. Classes from two separate schools were organised as paired groups, and the Oracle conferencing software Think.com was used to organise an on-line forum for discussion between groups. Think.com provides an online environment for sharing ideas and contributing text, data or documents for discussion. Schools are provided with email and conferencing links which comply with standards for Internet safety set by the UK government's Department for Education and Skills.

The groups' face-to-face and on-line discussions were related to a specific collaborative writing task: the creation of a web site about topics selected from their science curriculum. The following extract is an example of an initial contact written by one group to send to their partners.

HELLO! … We are class 5M which has fifteen children in it, eight boys and seven girls. We are excited about sending you a message and we love reading your replies. We are hoping that we will be able to help each other with our Science subject after the Easter holidays …
Today in our talking lesson we have a group of three people being videoed. We don't know how they are getting on at the moment but we hope they have remembered all the talking lesson rules….

The next extract is a response from the partner group which poses questions to sustain the conversation and direct it towards their joint science activities.

Hello there, we have received your message. Thank you for your short notice. … In our science lessons we are talking about materials. What are you talking about in science? We have mainly been talking about solids/ liquids/ gases.

The subsequent planning and creation of web pages involved the use of two further commercially produced software packages which were integrated with the use of Think.com. The lesson plans for this work provided teachers with a structure with which to encourage the children to apply and develop joint reasoning through 'exploratory writing' as they undertook this task. The children used eMindMaps software to plan ideas. This software enabled them to draw simple concept maps. These concept maps were shared with the partner group and replies were sent using Think.com.

The 'scaffolding' role of the teacher

The success of the Thinking Together programme depends crucially on the role of the teacher in guiding and modeling children's use of Exploratory Talk. The following extract, from the Teachers' Notes related to the on-line activity described

above, illustrates what is required of a teacher in establishing ways to build effective discussion. The teacher is asked to model Exploratory Talk in the introduction and to clarify aims at the start of the group activity. As with all the Thinking Together activities, a closing teacher-led plenary is used to share experience amongst members of the class and clarify what should happen next.

Introduction (Whole class)
…Discuss with the class how to make comments about a concept map and suggest possible changes. Draw a concept map … Ask the children to make comments about the map and how it could be improved.
Show them how to construct these comments in a positive way, e.g "We liked your idea about … Do you think that a link showing … might be a useful way to …? Can you explain the connection between …..?
Write some of these comments together.

Group work
…. Remind them of the ground rules for talk.
Ask the groups to look at their partner group's concept map. Then they should talk together to agree on some comments. Can they think of a question to ask about it? Can they make a suggestion about how it might be changed? ….

Plenary
The purpose of this plenary session is to create a class concept map that incorporates contributions from all of the groups…. Ask each group in turn to suggest one of their ideas and to explain its relationships. Each group could also explain one part of their partner group's map. As the contributions are made, record these onto the map. In this way the children will be able to see the relationships between all of the contributions. When the map is finished it should collate all the ideas from the groups…

In all lessons, children were reminded by their teachers to the 'ground rules for talk' (as described earlier in this chapter),

and were encouraged to use them in all group-based activities. At the end of the school year, the teachers reported that they had found the Thinking Together approach an exciting and motivating way to help their pupils engage in classroom activities. They said that children talked effectively in constructing ideas, using the ground rules and the support of the computer for planning, appraising, editing and presenting work. The tasks appeared to be meaningful and motivating to the children, providing an authentic audience of supportive peers and opportunities to collaborate with them in a meaningful way.

Teacher-pupil and pupil-pupil dialogues

Our research has involved the close examination of two types of dialogue in the classroom and the relationship between them: teacher- pupil talk and pupil-pupil talk.. The first of these involves 'asymmetrical' interaction between an adult (as an authoritative figure) and the children, while the second consists of a more 'symmetrical' relationship between peers. Both situations can provide successful opportunities for learning and development through the social construction of knowledge. But, within the context of the Thinking Together programme, it is interesting to consider how these situations differ in the ways language is used. How can the 'scaffolding' help of the teacher enable the children to succeed in a task that might otherwise be beyond their capabilities. And what are the strategies used by children when they must rely on their own resources for accomplishing a task?

Transcript 4: Working well is of a group of Year 5 children in a 'target' school, who have been following the Thinking Together programme for some months. While engaged in the on-line activity described earlier, they have asked for help from their teacher in composing a paragraph for an email message about 'How to have a healthy human body', which is in preparation to be sent to their partner group in another school.

Transcript 4: Working well

Teacher: Right. Somebody is going to read this to me now.

Declan: 'Dear Springdale. In Science we are looking at the healthy human body. We need a lot of exercise to keep our muscles, hearts and lungs working.'

Samia: 'Working well.'

Declan: 'Working well. It also keeps our bones strong.'

Samia: Yeah. We don't need a full stop.

Teacher: Yeah. That's fine. That's all right. Carry on. 'Flies…'

Declan: 'Flies and other animals can spread diseases and germs. That is why it is very important to keep food stored in clean cupboards, et cetera.'

Eva: Is cupboards spelled wrong? (It is written 'cubourds')

Teacher: Yes, it is spelled wrong actually. It is cup-boards. Cup-boards.

Samia: (reading as teacher writes) B-O-A-R-D-S.

Teacher: It's a difficult word: C-U-P cup, and then you've got the OU makes an 'ow' sound. But it's OA, boards.

Eva: O, A.

Teacher: OK. Can I ask you a question? And et cetera is ETC, not ECT. I want to ask you a question before you carry on. So why have you felt it is important as a group to send Springdale this information?

(Several children speak together)

Teacher: Just a minute. Let's have one answer at a time.

Samia: Cause if they haven't done it yet. We can give them the information…

Teacher: Yeah.

Samia: .. that we have found in the book and so when they do get – when they do this part they will know, they will know, so, to answer it.

Teacher: OK. Excellent. So what were you going to say Declan?

Declan: So they can have a healthy body and they can use it for information.

Teacher: OK.

Eva: And plus, if they haven't got the books.

Teacher: And if they haven't got the books. Now before you tell me anything else you've found in a book, I think, don't know what you think, do you think it would be a good idea to tell them why you are…what you've just explained to me? We are sending you this information because…

Samia: Just because, we couldn't find, something like…

Declan: They could be doing it right now.

Teacher: Well, they might be.

Samia: We are sending you this piece of information just in case you haven't done it yet, to help you.

Teacher: Right, discuss it how you want to say that. OK?

Comment

We can see how the teacher supports the children by providing the requested spelling of 'cupboards' and 'et cetera'. However, her intervention is not primarily to do with spelling. She asks the children to clarify the ideas to be written in the paragraph, about the purpose of sending information to the other school. She reminds them to take turns when giving their opinions. She encourages them to achieve an agreement before finishing what they want to write. She can therefore be seen here to scaffold learning by orientating children's attention towards the aims of their email, maintaining the focus of the children as they work towards producing effective text, as well as helping with more prosaic features of the task such as correct spelling. With this support, the children are able to consider and complete their message. The intervention of the teacher triggers their 'interthinking'. She stimulates discussion which allows the children to express their ideas both orally and in their written text. We can see this in the part of the discussion initiated by the teacher asking the children: "So why have you felt is important as a group to send Springdale this information?" After this question, the children provide reasons for writing this paragraph such as "…they can use it for information" and "…if they haven't got the books".

Transcript 5: Adding our names provides an extract from the talk of the same group of children spontaneously revising

together the final version of this e-mail. One of them has left the group for some minutes at the beginning of the segment, and returns by the end.

Transcript 5: Adding our names.

Samia: Do you want to read it?

Samia: 'Dear …You listen, I read it. (to Declan) You can see what changes we can make. OK? (reading) 'Dear Springdale School. In science we are looking at the healthy human body. We need a lot of exercise to keep our muscles, heart and lungs working well. It also keeps our bones strong. Flies and other animals can spread diseases and germs. That is why it is very important to keep food stored in clean cupboards, etc. We are sending this information to you just in case you haven't done it yet. We got this information from a book called Child's first book of human body on page 44. If you have not got this book

Declan: [this book

Samia: You might find it in a library close to you. (begins typing) From Declan, Samia and Eva.

Declan: Eva hasn't agreed with it. Why is Eva taking a long time?

Samia: Let's just write it, yeah? Then we can share what we've read.

Declan: We can write it down and don't send it. And then if Eva doesn't like, we can just delete it.

Samia: Yeah, that's right Declan.

Declan: Don't send it till Eva comes back.

Samia: Write your name. (Declan typing). Done.

Samia: (Eva arrives) We are. Do you think it is a good idea to write, to write, from Declan, Samia and Eva?

Eva: Yes.

Comment

In this sequence we see the children revising what they have written. They use their ground rules for talk to help them in this process. Samia reads the message aloud, breaking off to ask Declan to listen carefully and to suggest changes they could make. Once they have read their text, the children decide to add their names at the end. However, one of the group (Eva) is not there to endorse this decision. The others agree to write their names and wait till her return. By doing this, they are consciously implementing one of the ground rules of Exploratory Talk, 'Do we all agree?' Once Eva returns and agrees with the proposal, the children ready to send the email to their partner group.

Even without the presence of a teacher, the group used language to construct their message by following the ground rules of Exploratory Talk. The ground rules helped them to build a linguistic 'scaffolding' by breaking down the problem into steps (e.g. suggesting more ideas to be written at the end of each revision) and distributing responsibility within the group (e.g. reviewing by reading aloud, agreeing on the final text), thereby making the task of writing easier for each individual child.

Collaborative writing is a very complex process that depends on the contributions and cognitive resources the each child can bring to the process. When there is a teacher helping the children to achieve the goal of producing a piece of text, she scaffolds the process by revising with the children what they have written so far, giving them feedback and suggestions, and triggering ideas about how to continue. When the talk-tutored group of children are working alone they can rely on the way they are able to use language as a tool for collective thinking to overcome problems and complete their text. By following the ground rules of exploratory talk they create a linguistic 'scaffolding' that has similar functions to the 'scaffolding' provided by a teacher. In this way it is possible for groups of children to collaborate effectively, and produce satisfying written text.

10. Conclusion

We have explained how our Thinking Together research has generated a particular perspective on the development of children's language skills. From this perspective – essentially a sociocultural perspective – collaborative activities are seen as a means for developing both language skills and thinking skills. We have shown that the use of suitably designed activities (some of which have been computer-based) supports the development of children's use of spoken and written language, and their use of language for 'interthinking'. However, the valuable potential of joint activity for developing children talk and reasoning is only likely to be realized if such activities are preceded by teaching which raises children's understanding of how they can use language as a tool for thinking together. The active participation of the teacher as a guide and model for children's discourse is crucial.

In summary, our research has identified three related factors which are important for determining the success of this approach for developing children's reasoning and language skills:

1. The design of joint activities as a stimulus and framing structure for talk and reasoning.
2. The teacher's structuring of the task or activity to create the conditions for educationally effective interaction.
3. The sensitive guiding and intervention of the teacher in enabling children to develop and use language as an effective tool for reasoning – and to recognize and understand the value of the use of this tool.

On this basis, the Thinking Together approach can help to induct children into the ways with words which they will need to achieve educational success and to participate actively and successfully in many aspects of social life.

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Website

More information about the Thinking Together research, with examples of classroom activities used, etc. can be found on the website: http://www.thinkingtogether.org.uk

Software References

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