Developing young children’s thinking through learning to write argument

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Abstract This article draws on evidence from a small-scale study carried out in two early years classrooms. The study investigated an approach that appeared to enable very young children to construct and to write an argument. Multi-disciplinary theoretical perspectives are utilized for an explanation of the findings, with the work of Kress (1989) and Andrews (1995, 1997) on the nature of argument itself, Donaldson (1993) and Bereiter and Scardamalia (1993) on the value of writing to structure and develop thinking, being the most prominent. The case studies discussed here show that 5–7 year olds can engage with contentious, real-life issues and if offered structured support, they are able not only to produce written texts in the argument genre but their thinking also develops. A collaboration between professionals from different fields of education which aimed to support children’s learning in literacy reaffirms the impressive competence of early years pupils.

Keywords development of thinking; literacy development; writing argument; young children

Introduction

Children should be taught written language not just the writing of letters. (Vygotsky, 1978: 119)

The task of writing presents a challenge for both adults and children. Cognitive psychology has informed understanding of the multi-dimensional information processing load that writing presents to an individual. Bereiter and Scardamalia (1985) suggest that a writer has to consider several operational aspects of writing, from thinking what to say in the first place, sustaining production, coping with the multiple...
possibilities of the spelling system, through to the higher order demands of organizing a discourse; added to which all these have to be handled more or less simultaneously. Therefore, structuring a written text with the organization of the author’s ideas in a permanent, logical form demands a variety of conceptual understandings, cognitive abilities and practical skills more akin to, and certainly as demanding as, those needed by an air traffic controller (Hayes and Flower, 1980).

Along with developing linguistic ability is children’s growing awareness of the way that language is used in different ways for different purposes and social situations. Genre theory offers explanation of how the form a text takes is influenced by its social purpose and cultural context in both written and spoken texts (Kress, 1985; Martin et al., 1987). Such ideas, in turn, were developed from a functional linguistic theory of discourse (Halliday, 1975, 1978).

In the throes of enabling their pupils to get to grips with this complexity, teachers of early years pupils are often unaware of the role of written language in the organization, structuring and enhancement of thinking (Donaldson, 1993). This empowering function of writing became evident over the course of the study while teaching 5–7 year olds the purposes and conventions of the various genres, and, in particular, through developing teaching approaches to support young children to construct and to write a text in the argument genre.

Although children argue orally with enthusiasm, it is generally considered inappropriate to expect 5, 6 and 7 year olds to produce a written argument. Indeed, the English National Curriculum and the National Literacy Strategy (Department for Education and Employment [DfEE], 1998), an ambitious government intervention introduced in 1998 to raise literacy standards in England, delays teaching the conventions of written argument until Year 5 (10 year olds). However, in both the case study investigations that are discussed here, Year 1 pupils (5 and 6 year olds) and Year 2 pupils (6 and 7 year olds) demonstrated that they are able, intellectually, to grasp the complexity of an issue, and can develop an argument following the conventions of the discourse in a sophisticated way.

Why teach the writing of argument?

Argument is one of the most powerful genres; it has been suggested by some writers that it is the high cultural form used in government, public debate, academia and business, and as such the genre requires the most developed of higher-order thinking skills. It is the view of Kress (1989) that children are disenfranchised if they are excluded from being able to engage fully with, and use, argument. We agree with Kress (1989) that pupils
should be given access to this genre by being introduced to, and taught how to use, these powerful genres as a matter of right.

As with most complex concepts, the essence of argument is viewed in different ways. One place to start is the consideration of the essential features.

Based on an educational research project teaching sixth formers and students in higher education to write argument, Mitchell (1994) suggests that the ability to write an argument entails:

- recognition of, and the ability to operate within, appropriate parameters;
- understanding of the conventions of the discourse;
- possession of sufficient knowledge;
- the ability to articulate that knowledge in novel, yet situated, ways.

The point that argument is adversarial is made clear by Billig who says:

... there is always another side to the question and another argumentative counter move which can be made ... when an object or event is categorized, it is labelled and considered similar ... however, each categorization is contestable ... (Billig, 1991: 28)

It was the ability to appreciate both points of view to a question, the key identifying feature of argument, that this study attempted to explore with young children. We posed the question: are five and six year olds capable of appreciating that every issue has at least two, but perhaps several, ways of perceiving it?

However, other writers, Andrews (1997) for example, argue that Billig's statement is a narrow, and perhaps, rather negative interpretation, and that the function of argument is to clarify, to demonstrate, to either establish or question a position generally taken for granted. The main feature of argument, Andrews asserts, that makes it different from an explanation, is the element of doubt that is cast about an issue. He quotes Toulmin et al. (1984) who think that 'the argumentation' (or the process of argument) is what is important, and that this amounts to a train of reasoning as the elements are played through with the claims and counter claims. This view has led Andrews towards what he terms a new and broader definition as a 'way of seeing and arguing about the field' (Andrews, 1997: 266). The value is in the process and the process is essentially dialogic. As Andrews continues '... part of the function of argument is to try to ensure that the relationship between ideas and action, and the possibility of the exchange of ideas, remains alive (Andrews, 1997: 268). It is this view of argumentation, and what it offers of educational value for young learners, that we take in this article.
Why is writing argument a way of developing thinking?

Piaget (1926) makes a distinction between children in the pre-operational stage of thought, who are able to construct only a primitive argument, with their reasoning implicit, and children in the stage of concrete operational thought, who are able to construct a genuine argument in Piaget’s terms, and able to make their reasoning explicit. The extent to which knowing how to develop argumentation assists thinking is not made by Piaget, however, others are not so reticent. Andrew (1995: 167) suggests that ‘. . . it is possible to link argument to cognitive, emotional and linguistic development from an early age’.

Billig (1991), Vygotsky (1986) and others agree that issues and positions are clearer after they have been argued through. The audience (i.e. the reader) may be clearer on account of the argumentation or the clarification, which is related to critical thinking, and may benefit the author/speaker him or herself. The argument itself has given dialogic shape to half-formed ideas, feelings and thoughts, thus bringing them into existence and so making a consideration of them possible.

The essence, then, of argumentation is the ‘bringing of difference into existence’ (Kress, 1989). By that Kress means that through the process of constructing an argument in writing the writer has to use the structure and form in such a way as to be able to manage multiple and often opposing points of view. Argument is the particular generic form, the mode of textual organization, which sharpens difference and articulates alternative positions in relation to a given topic. These texts provide also, in a ritualized fashion, the resolution of the difference that makes new meaning in the process, as opposed to narrative which articulates the known. The issue of developing new meaning for oneself (and perhaps others) centres around the way that language, in the form of a text, is involved with the production of knowledge.

Billig (1991) goes on to say that ‘the sound of argument is the sound of thinking’ and suggests that the integral components are:

- knowledge
- comprehension
- application
- analysis
- synthesis.

When producing a written argument, an individual needs both a sound knowledge base and a deep understanding of the complexity of the issue under consideration, before being able to appreciate that there are several perspectives that can be taken. As the argument is developed, knowledge is
examined, applied, and then reconstructed. Understanding is moved on. The dialogic principle, as we have argued, has the function of linking thoughts to each other. Argumentation assists the process of thinking through its various components, as in Billig’s list, by making the ‘inner speech’ of an individual transform into ‘outer speech’; and the thinking becomes explicit, linked and developed. As Vygotsky (1986: 149) poetically suggests ‘inner speech’ is ‘a dynamic, unstable thing, fluttering between word and thought’. Vygotsky also quotes Piaget who suggests that ‘. . . reflection may be regarded as inner argumentation’ (Light et al., 1991, cited by Andrews, 1995: 35).

Individuals going through the process of argumentation will be required to evaluate the current state of their knowledge base surrounding an issue, they will apply this knowledge to the case in point through analysis and synthesis of the content. Argumentation therefore occurs at both the interpersonal, as dialogue between people, as well as the intrapersonal, dialogue with oneself, and in both cases reorganizes the content and so develops cognition.

The investigation

This article will draw on evidence collected through two case studies, one in a Year 1 class (with 25 5–6 year olds) and the other in a Year 2 class (with 27 6–7 year olds). Both early years classrooms were situated in 350–400 pupil primary schools in a white, predominantly working class, suburb of north-east London. The classes contained an equal balance of boys and girls and also included one or two children for whom English was their additional language. Both class teachers were female and very experienced early years teachers, whose typical literacy lessons were broadly based on the structure of the ‘Literacy Hour’, as stipulated in the ‘National Literacy Strategy [NLS] Framework for Teaching’ (DfEE, 1998). The NLS Literacy Hour is divided into three sections – the first section consists of whole class teaching (approximately 30 minutes), the second section (20 minutes) is used for group work as well as individual practice and a final and shorter section (approximately 10 minutes) is spent with a whole class plenary reflecting on the work and the learning achieved during the 50 minute session. The usual pedagogical approaches employed by the class teachers to teach writing would be shared and guided writing, drawing on the analysis of textual models, moving into supporting their pupils’ independent writing. The actual teaching described in this article was carried out by one of us (DR). The authors, one a university academic and the other a local education authority Primary English adviser, collaborated...
in order to establish whether young children, given the appropriate experiences, teaching and support, are able to grasp the principles of constructing an argument and therefore to produce written texts which demonstrate the distinguishing features of the persuasive genre. The sequences of teaching were developed within a conceptual framework based on the work of Kress, Andrews, Mitchell and Billig, to which reference has been made above.

How did we lead very young children through this process of constructing an argument or argumentation and provide them with opportunities to develop crucial intellectual skills? What follows is the description and analysis of two worked examples of our teaching approach with very young children. The teaching draws on models suggested by Mallet (1992) and Wray and Lewis (1997). Mallet (1992: 61) describes the stages of the process that are typically gone through when reading and writing non-fiction in a school context. The model used below is not seen as linear: the stages are likely to overlap, they may occur in a different order, and/or they maybe repeated. Wray and Lewis’ EXIT model (1997) has more steps and is more detailed in the later stages. Both models offer the use of ‘writing frames’ as the approach to support children as they organize and structure their own writing.

The justification for the use of ‘writing frames’, as a temporary scaffold in the initial stages of teaching a new genre is twofold. As a method of reducing the cognitive demands the writing process makes on a child, shared writing is a well-known approach to the teaching of writing and one that is recommended by the NLS (DfEE, 1998). In shared writing the adult models the way that ideas can be built up first into words, then sentences and finally into a coherent, structured text and thus making explicit to inexperienced writers how the decisions are made regarding the organization of a piece of writing.

The use of a ‘writing frame’ extends this teaching approach by providing a series of prompts to support the child when writing. The first phrase of sentences are supplied at key points in the text; this framework has the function of freeing up the writer from the multi-demands of composition and encourages a sharp focus on the writing at sentence level. Thus supported, the child’s psychological space is released, and he/she is more able to handle, simultaneously, the opposing ideas of the argument.

The use of ‘writing frames’ is only an aspect of an extended sequence of teaching and while the frames have only a limited function, they are valuable at a particular and transitionary phase of writing development.

We used the following adaptation of the two models, which in practice successfully complement each other. This sequence of teaching, in the first
example, took place over three, 45-minute sessions, with 2 days between the first two sessions, and a week between the second and third session, in order to enable the children to research into the chosen topic, zoos, thoroughly. The headings used below are derived from a composite of both the Wray and Lewis and Mallet models.

**Example 1: The issue of zoos (a year 1 class project)**
The project is built on previous work on 'living things'; during the zoo project the thinking of the whole class is built up carefully and shaped, step by step, in order to deepen the understanding of the pupils.

**Activating previous knowledge/organizing prior experience** The initial discussion about the nature of zoos was informed by the children’s own experience of previous visits to zoos. ‘Brainstorming’ was carried out initially as a whole class activity and then the children worked on spider diagrams in groups of 3 and 4 to record their ideas. With reference to zoos, this resulted in a comprehensive account of the current state of the collective knowledge of the class. A few children recorded factual information visually through drawing, but most were able to write their thoughts down in words. The pooled ideas were recorded by DR on an easel and are listed below:
- animals are kept in cages
- there are strong smells associated with zoos
- zookeepers look after and feed the animals
- zoos are fun
- you can have a picnic on a visit.

From this knowledge base it became apparent that there were three main information strands that could be summarized as follows:
- the different creatures to be found in zoos (these were recorded). This was the largest category of information possessed by the class;
- the experience of animals in the zoo (e.g. they are looked after by zookeepers, they get washed and fed);
- the experience of people visiting zoos (e.g. you have fun, you can see the animals).

**Offering new experience/establishing purposes** It was clear that the children had not considered zoos as a potentially controversial subject. Zoos were an accepted part of the world. In order to introduce a sense of ‘dis-equilibrium’ (i.e. the notion that there is ‘another side to the issue’) and to
allow the class to reflect more deeply on why zoos exist and to explore an ethical dimension, the picture book 'Zoo', by Anthony Browne (1992) was read to the children. The story tells of a family visiting a zoo and, by careful juxtaposition of image and word, questions are raised about the ethics of zoos. This made the children uneasy. They began to wonder whether zoos were good places for the animals themselves. On completing the reading of the book, the questions that the book raised were discussed. They included:

• why did the animals look so unhappy?
• why did the mother in the family say ‘poor thing’ about the tiger continuously pacing up and down its cage?
• and then, at the end, why did the mother make the comment ‘I don’t think the zoo is for animals, I think it’s for people’?

Lively debate followed. As this discussion developed it was pointed out that there was more than one point of view about the keeping of animals in zoos.

A ‘cognitive frame’ was introduced as a way of perceiving and contrasting the two positions in the argument. (In practice this simply meant that a sheet of paper had a line drawn down the middle!) This acted as a scaffold by supporting and enabling the children to hold the multiple positions in their heads and to compare them. All the class members were intensely
involved in thinking about this issue. The final list of points are recorded in Table 1.

While it is arguable whether the third positive statement ‘Animals can’t get out of their cages and hurt people’ is appropriately placed in the ‘Good for animals’ column, it was obvious that the understanding of these six year olds had developed since their initial ideas about zoos were audited. The children each wrote a short piece in which they demonstrate a clear understanding of the generic structure of persuasive writing based on the discussion and the ‘cognitive frame’ jointly constructed.

Amy-Rose writes:

I think zoos are good for people but I think that zoos are horrible for animals. I think zoos are fun to play in. I think cages are bad for animals.

Her two-fold thesis is clear and the points she wants to make to justify her position follow the same pattern. There is no restatement at the end but there is no necessity to do so, as it would be close to the original statement.

Daisy offers:

I think zoos are bad for animals because they get taken away from their country and the animals get locked up in a cage so I think its bad.

This writing contains all the structural elements necessary. The thesis is stated; ‘I think zoos are bad for animals . . .’ with two points made to support it, then Daisy ends by restating her thesis and uses an appropriate conjunction ‘so’ to refer back to her original statement.

Ryan was not so convinced by either position. He decided there were strong points to be made to support both positions. He writes:

I think zoos are good and bad

Good

I think zoos are good and they give the animals a home and are fed and they are bathed

Table 1 The effect of zoos on the animals

<table>
<thead>
<tr>
<th>Good for animals</th>
<th>Bad for animals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Animals get fed</td>
<td>Animals are locked in cages</td>
</tr>
<tr>
<td>Animals don’t get hurt</td>
<td>Animals are taken away from their real homes</td>
</tr>
<tr>
<td>Animals can’t get out of their cages and hurt people</td>
<td>The babies might miss their mummies and get lost</td>
</tr>
<tr>
<td>If people were locked in the cages it would be boring to look at</td>
<td></td>
</tr>
</tbody>
</table>

Table 1
Bad

I think zoos are bad because the people take animals away and they take their dads away.

In Ryan’s case, there is a clear use of the generic structure of a discussion. There is a statement of the issue followed by arguments for and against.

Figure 2 Example of child’s writing

Figure 3 Amanda’s writing
What is missing is a recommendation at the end, possibly due to indecision about which view he wishes to adopt, or he may have decided that both sides of the argument are equally valid.

These examples of writing (Figures 1–4) demonstrate that the children were able to construct a text of written argument based on the preceding discussion and teaching. The next step was to harness their heightened awareness about the nature and function of zoos in order to do further research.

Establishing purposes/formulating questions Additional information was needed if the children were to be able to decide whether zoos were good or bad. The words ‘why’, ‘what’, ‘when’, ‘how’, ‘where’ helped to prompt the full questions that were written down as follows:

- What do animals do in zoos?
- What do zookeepers do?
- How are zoos good for animals?
- How are zoos bad for animals?
Why are animals happy in zoos?
Why are animals bored in zoos?
Why aren’t animals free?

**Discussing and planning/locating information** Where could this type of information be found? In the two days between the teaching sessions, books were collected from a variety of sources and were used to inform their research.

**Study skills/adopting an appropriate strategy** The next stage was to select books from the collection in order to find the relevant information that would help to clarify the specific issues. Teaching was required to help children determine whether a book would provide the appropriate information.

**Interacting with text/retrieval devices/making a record** Working in small groups, each child chose a book in which to search for information. Most children either used the contents list to locate a relevant part of the book, or simply browsed using the pictures as a prompt for stopping and reading the text. This was a collaborative journey involving the children and the teacher. Most of the reading was done by adults, as the content of the children’s books was too superficial, but the reading level of the adult non-fiction books was too challenging for the children to be able to access the information.

The relevant passages were found and read aloud and the information was discussed. The technical language was explained, as well as guidance in the handling of some of the dichotomies of the issue (e.g. animals removed from their natural habitat as opposed to preserving endangered species).

**Reformulating and reflecting/communicating information** These insights enabled the children to construct a more detailed written argument. A writing frame was introduced. A frame was constructed following closely the generic structure of argument and the guidance for constructing ‘writing frames’ (Wray and Lewis, 1997). These are typical examples of the writing that the 5- and 6-year old children produced.

James and Martin wrote:

We think that zoos are good.

We have some reasons for this.

Our first reason is because they get fed. Each animal has a different food prepared for it.
Our second reason is they get looked after by the vet.

Our last reason is the zookeeper cares for the animals.

Although some people think that zoos are bad because the animals are taken away from their homes.

We think we have shown our point.

Lewis and Nancy posed an alternative view, they wrote the following;

We think that zoos are bad for the animals.

We have some reasons for this.

Our first reason is the animals are kept in little cages.

Our second reason is the animals are bored in the little cages.

Our last reason is they walk up and down.

Although some people think [they are] good because they are tame.

We think we have shown enough of the zoos to show they are bad.

There are a number of striking differences between these and the earlier examples shown of written argument. The children here used additional and secondary information to support their thinking. The vet’s care is seen as a benefit to animals in captivity. From the other side, the awareness that the tigers’ pacing up and down in their enclosures, a sign of acute boredom, is so powerful that it dominates the whole of Lewis and Nancy’s text. The cohesion of the children’s texts is impressive. The arguments are focused and clear as a result of their deeper understanding and more developed thinking. The writing, in a real sense, simply records in a structured way, the changes in thinking which had occurred through collective discussion and opportunities for decision-making.

The importance of the time spent in discussing, researching and reflecting cannot be stressed enough. It is this process that deepens the children’s understanding and reaps the intellectual rewards demonstrated here.

In the second example, the topic chosen for the project was the issue of children being educated at home. This sequence of teaching took place in two one-hour sessions with a week between the sessions.

Example 2: The issue of children educated at home by their parents (a Year 2 class project)

It became clear in the initial class discussion that the issue of children being educated at home was new to these children. They were quite shocked to learn that some parents believed that they could educate their children more effectively than teachers. (Horrified gasps of ‘No!’ were heard.)
The class members were told that in the next session they would meet a parent, a Mr Smith, who is educating his son Curtis at home. In preparation for the visit they brainstormed the questions that it might be useful to ask Mr Smith (DR in role). Questions were written down and included:

- Why don’t you take Curtis to school?
- Where does he do PE?
- Why do you think you can do a better job than the teachers?
- What do you teach Curtis mostly?
- Where do you get your son’s homework from?

The pupils’ views on why it is valuable to go to school consisted largely of the ‘importance of learning how to spell and to make friends’ variety (see Figure 5). In the next teaching session, the children were encouraged to listen to Mr Smith’s answers to their questions and to note down what he had said in the ‘Mr Smith’s argument’ column on a sheet of paper. When he left the room, the children discussed the points made and considered what the counter arguments might be. These were then completed by pairs of children on the two-columned grid, as with the ‘Zoos project’ a ‘cognitive frame’ helped to structure the thinking.

The purpose of the third teaching session was to demonstrate how to structure a written argument to Mr Smith in the form of a letter in order to try to persuade him that Curtis would fare better at school than by being educated at home. This was modelled orally by DR using sentence...
### Table 2  Examples from the grid

#### A  Mr Smith's argument  The opposite argument
1. Curtis plays in the garden the playground is better because it has markings to play lots of games
2. Other children will pick on Curtis the teachers will stop them
3. Curtis makes stuff (artifacts!) out of wood and paints it there are many more things to paint

#### B  Mr Smith's argument  The opposite argument
1. Curtis goes for a walk in the park we have school trips
2. Curtis has books in his bedroom we have masses of books in the library

#### C  Mr Smith's argument  The opposite argument
1. Curtis has a sandwich and crisps for lunch at school we have more than that!
2. He is better off working in the front room you share ideas at school
3. He plays with his friend at the weekend at school you can play with your friends more often

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**Figure 6**  The pros and cons of educating children at home
constructions such as: ‘I think that Curtis should be taught at school because . . .’ then the pupils rehearsed their arguments in pairs. The class letter was written using a writing frame, with the teacher demonstrating and scribing the letter using the suggestions of the pupils (see Table 2 and Figure 6).

The class version is as follows:

Dear Mr Smith

I think that Curtis should be taught at school.

My first reason is at home you only have few books. At school Curtis would be able to read lots more interesting books.

My second reason is at home Curtis is on his own. At school he will be able to act in plays, make lots of friends, play different games and work together with other children.

Even though you think that Curtis is safe at home I think that you should take him to school.

From

Mr Reedy and Class 2 W.

Working in pairs the children wrote letters without adult support. As before a ‘writing frame’ provided an organizational structure.

Dear Mr Smith

I think that Curtis should be taught at school.

My first reason is at school we have assemblies because we sing together. At home he will have to sing on his own.

My second reason is at home he has no friends at school we have friends.

Even though you say you should keep him at home. I think it would be gooder if you took him to school.

From Michaela and Dylan

The children had an opportunity, orally, to rehearse the argument and a counter argument. The difficulty for very young children is the anticipation of what an alternative viewpoint might be. Managing two viewpoints in one’s head requires advanced intellectual ability, and is generally considered to be one of the higher order thinking skills. The grid format helps the children to structure their thinking in a systematic way because it makes the two viewpoints explicit, concrete and available simultaneously for consideration. This accords with Andrews’ suggestion of the possibility of a visual (or even multimodal) dimension of argument that has the power to enable cognitive growth to take place. He uses the metaphor of dance
where ‘... argument is a place where two (or more) people might choreograph for themselves, and perform, a movement that is mutual and that moves them to a new position’ (Andrews, 1995: 148). The grid performs this role and allows young children to manipulate mentally the variables of the differing viewpoints. We would argue that the ‘writing frame’ is essential at text level as it offers an overall organization of ideas which frees the children to concentrate on the manipulation of the two perspectives, which is the element which moves their thinking on. The management of multiple viewpoints happens at sentence level, either contrasting the ideas within one sentence, or between two consecutive sentences. This is the aspect that young children find very challenging. It was the explicit use of the phrases ‘at school . . .' followed by ‘at home . . .' that seemed to enable the pupils to manipulate the various positions mentally. They were able to contrast them while trying to persuade Mr Smith that a particular course of action is preferable. Not surprisingly, very young children find this complex intellectual task at sentence level problematic. This key feature of argument needs to be explicitly taught by the teacher and in careful stages. First, through the use of role-play: in the second case study DR went into role as Mr Smith. Second, visual concrete support is given through writing the two perspectives in the two columns. Third, DR models how two positions can be expressed in written language in one or two sentences to an unknown audience e.g. 'My second reason is at home he has no friends at school he has friends.'

Conclusion

In both of the case studies, the pupils showed that they were able to construct and develop an argument encompassing the features postulated by Mitchell (1994) and Billig (1991) discussed in the introduction. Clearly, the thinking of these children also developed during the teaching sequences described here. The children demonstrated that they were more able to appreciate the complexity of the topics by the contrast between the earlier writing and their later examples. We argue that their perception of the issues in question had developed through their ability to articulate their own judgments and opinions in relation to others in the group. What had enabled the children to operate at this intellectually higher level?

In summary, the following key elements in the teaching approach appear to be:

• the choice of a controversial topic needs to be one that the children can relate to, one that they can become very interested in, and which has
rich potential to provoke thought. Most appropriate here is a topic found either in the world of the child, or through a challenging text presented to them;

• the topic of zoos, the focus of the first of the two case studies described above, combine the two. Zoos are a known part of pupils’ lives but the controversy was introduced via the text/story;

• children need to be offered an experience in which to embed their understanding of the debate (a text, a visit, drama, etc.);

• brainstorming: used as a strategy to develop vocabulary and ideas and to make explicit a cognitive frame (thus enabling two viewpoints to be ‘seen’ and handled mentally simultaneously);

• the informed selection of thought – provoking children’s literature that has the capacity to extend understanding of the topic is used;

• the introduction of new information through access to texts, and teacher’s support through the reading of texts beyond the pupils’ reading levels (i.e. increasing access to written language as a resource);

• the teacher (DR) models the thought processes through commentary and the use of writing acts both as a record and as a ‘cognitive frame’. Writing makes thoughts permanent and provides structures for emerging understanding, which in turn further develops the children’s awareness;

• the teacher’s use of questioning and responses to the children’s spoken contributions creates a dialogue which makes explicit and models the metacognitive processing which is occurring.

The teacher’s questioning also demonstrates the use of discussion for thinking and learning through:

• probing understanding
• causing children to reflect and to refine their own work
• the expansion of ideas
• the checking/testing of understanding (Williams, 2000)
• scaffolding children’s thinking into a more advanced state.

In both of the teaching sequences, the children are enabled to reflect on their own thinking. Externalization of internal cognitive processes through questioning and through the teacher-led discussion ensures that the thinking which aids concept formation is made explicit. The example of teacher modelling and thinking aloud demonstrates metacognitive strategies and metalinguistic understanding. The teaching supported understanding of the topic in considerable depth and the writing further clarified the developing ideas.
The project reveals the way teaching supported children’s growing understanding, in four main ways. First of all, and crucially, the young children were engaged with the topics. This is in line with the everyday notion of argument in adulthood, which involves commitment to the topic under discussion at an emotional level. These pupils were gripped by the notion that animals might not like being in a zoo and were genuinely intrigued by the idea that children might, legitimately, not attend school. Their common-sense view of the world had been challenged, and they were offered new ways of constructing their own reality.

Second, the topics provided the context but the children’s thinking was facilitated and shaped by the use of writing. It has been argued that writing is a complex cultural tool that facilitates thinking by organizing thought. As Donaldson (1993) says ‘The thinking itself draws great strength from literacy whenever it is more than a mere scrap of an idea, whenever there are complex possibilities to consider. It is even more obvious that the sustained, orderly communication of this kind of thinking requires considerable mastery of the written word’ (p. 50). Also writing changes thinking. Bereiter and Scardamalia (1993) posit two types of writing, namely, knowledge-telling and knowledge-transforming. The case studies described in this article demonstrate the latter very powerfully.

Third, in addition, as DR worked with the children he enabled them, through oral and written dialogue, to make these shifts in thinking and to reflect upon their own changing understandings through making explicit how they were learning (Richmond, 1990). Learning is achieved subconsciously at first, but can be enhanced by enabling and giving children opportunities to think about, discuss, and have made explicit to them how they are learning. Richmond suggests that the relationship between thought and word is mediated and developed through language and that, clearly, the only effective teaching is that which is ahead of development and enables progression. Teaching can (and should) build on spontaneous concept development and develop learning in a systematic way, which should lead to concept formation (Vygotsky, 1962). The teacher’s role is crucial here. The development of the argument would not have happened in these examples without the intervention of the teacher.

The creation of dialogue between the teacher and pupils, through discussion and role-play, is central. Dialogue is the form of language in the classroom that is so powerful in promoting learning. Alexander (2004: 19) drawing on his comparative studies of the cultural influence on pedagogy states ‘...in the...context of that classroom talk through which education meanings are most characteristically conveyed and explored, dialogue
becomes not a feature of learning but one of its most essential tools’. Thus it is intrinsic in the way that teachers and pupils interact, incorporating challenge and disagreement (as well as moving to a consensus), which leads to changes in thinking. The teacher’s role within the interaction is to ensure that cognitive challenge exists. In argumentation dialogue is almost guaranteed!

The process of using both spoken and written language to express, perhaps only half-formed ideas, clarifies thinking and enhances intellectual growth. Put another way, language awareness and thinking come together as ideas are articulated through the challenge of engaging in argumentative dialogue; this develops and extends thinking. Written language extends thinking further still by helping individuals to manipulate complex ideas through the process of writing. Teachers can support children to engage with, construct, and join in genuine debate about texts, and in text production; in so doing they are encouraged to think more critically, and this equips them to take an informed position on a given issue.

In the teaching sequences described in this article, the children are enabled to reflect on their own thinking. Externalization of internal cognitive processes, through questioning, and through the teacher-led discussion, allows the thinking that aids concept formation to be made explicit. This example of teacher modelling and thinking aloud demonstrates metacognitive strategies and metalinguistic understanding. The activity of thinking about another’s thinking, and examining it, lays the foundations of critical analysis. Examining an individual’s motives (for example as with the parent, Mr Smith) which may run counter to our own viewpoint is a mind-expanding task. So, the characteristics of this approach to teaching supported understanding of the topic in considerable depth, and the writing further clarified the developing ideas.

Fourth, it is the nature of argument itself, as a discourse, which also enhanced the thinking. Kress (1989) compares narrative and argument when he writes:

Narrative, in other words, is a form whose characteristic is to produce closure; argument is the form whose fundamental characteristic is to produce difference hence openness . . . Both are essential social cultural forms: the one form which is productive of stability, concerned essentially with the effective reproduction of culture; the other form which is productive of change, concerned essentially with the effective production of new cultural values and knowledge. (Kress, 1989: 12)

Comparison between the different intellectual demands of the two discourses – narrative and argument – is needed to consider the distinctive
Central to a successful story is its meaning or its main message. Bruner (1991) suggests that there is textual interdependence in any story between the whole and the parts, both in its construction and comprehension. The more complex a text, in terms of the various elements, the more opportunity there is for textual or referential ambiguity. For children to interpret the meaning of a narrative they must appreciate the reasons for the storytelling, the politico-social background – they need to understand the world the story inhabits – and to recognize how this might differ from their own world. Empathetic awareness or the ability to take on the mantle of another’s world-view is a necessary cognitive skill in order to fully grasp the meaning of narrative. In argument, the individual’s task is to recognize that there are different perspectives on an issue and that the discourse allows close scrutiny of these through the systematic organization of the points on both sides of the argument. Kress (1989: 13) suggests ‘... clearly, questions around knowledge or systems of value can be presented via either narrative or argumentative generic forms; that is, there is a choice to be made. The effect of using the one rather than the other will be to provide resolution rather than difference and critique’.

The kind of thinking demonstrated by these children was enhanced by their deep engagement with the process of argumentation and a text form that sharpens difference, and in so doing they became able to critique the difference. The children defined their position in relation to others and engaged collaboratively in the argument that was resolved individually, even if it was not universally consensual.

The central place of argument in the teaching enabled the thinking of these children to develop through bringing difference into being explicitly; this was supported by the writing, and this opportunity allowed the issue to be critiqued. The role of argument in developing critical thinking skills is at the heart of the value of this project. As Andrews (1995: 42) says ‘The imperative is there because behind argument as expressed in verbal/and or visual language is thought; and informing thought are reason and systems for producing thought’. As others have said before, the implications for the primary school curriculum are considerable.

This small-scale investigation was possible through the collaboration between an experienced, knowledgeable practitioner working with groups of children to whom he not only had access but was known and respected, and a university academic whose interest and expertise is in literacy in the early years of school. Such collaborations not only move thinking in the field forward, but also enhance the professional lives of
both participants – an example of genuine, reflective practice to the great benefit of the pupils.

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