The development of punctuation knowledge in children aged seven to eleven

Background

This project derived from a range of issues:

Perceptions that standards of punctuation are too low

In recent years there have been continual complaints from politicians, journalists, people in business and commerce, and parents that standards of punctuation are too low. Thus considerable public attention has focussed on the failure of the school system to produce school leavers who can appropriately punctuate writing.

The impact of government initiatives

The government's response to these complaints was to ensure that punctuation became a powerful feature of the National Literacy Strategy, with the teaching of punctuation carefully prescribed when the Framework For Teaching appeared in 1998.

The lack of research in the area

On the whole, literacy and literacy education are among the most widely researched areas in the social sciences. However, research into punctuation is almost entirely absent, especially any relating to how children understand punctuation (for exceptions see Hall, 1996, and later publications). The situation is even more dire at Key Stage 2, with fewer studies relating to this age group. Wilde (1987), Cordiero (1988) made brief forays into this age group, and Bryant, Devine, Ledward and Nunes (1997) looked at upper Key Stage 2 children's use of the apostrophe, but all these researchers relied on either retrospective analysis of writing or formal testing, and failed to use children’s own insights into punctuation knowledge.

Given the number of children between the ages of 7 and 11 at any one time in English-speaking schools who are learning to punctuate, and given the centrality of punctuation to the process of making meaning in writing and reading, it seems extraordinary that so little research has been carried out. It was to fill this gap that a proposal was submitted to ESRC at the beginning of 1999, and the proposal was awarded funding in October 1999.

Aims and Objectives

General aim

To develop an account of 7-11-year-old children’s developing beliefs about punctuation in the classroom context, and to thereby make a significant contribution to teachers' understanding of the task of teaching punctuation and effectiveness of their teaching.
Objectives

1. To develop a clear, coherent and comprehensive account of the development of children's understanding of punctuation, particularly intra-sentence punctuation, throughout Key Stage 2.

2. To develop an account of the relationship between the development of knowledge about punctuation and knowledge about other aspects of written language.

3. To investigate the influence of classroom contextual features, including pedagogy, in the development of children's understanding of punctuation.

4. To explore the implications of the study for developing theoretically and practically appropriate strategies for teaching punctuation to children in Key Stage 2.

Methods

The project worked with sixteen classes, one from each Key Stage 2 age group in four schools. The schools were in very different social areas and had very different ratings in LEA league tables. From each class two focal groups, each of three children, were selected, giving a total sample of 96 children. These children were selected after administration of straightforward punctuation insertion exercise (a separate one for years 3/4 and years 5/6). These were used solely to identify children around the middle ability level of each class. Potential members of focal groups were identified and discussed with the class teachers to ensure that there were no aberrations in the test results, that children would get along with each other, and that groups did not contain children who would either dominate or not contribute. As far as possible each class had one group containing only boys and one containing only girls.

The project used a range of methods to collect data: teacher interviews, classroom observations, collections of children's work, and specific punctuation problem-solving exercises. Most of the principal data was recordings (video and tape) of discussions and conversations and the analytical approach with these was mostly qualitative, involving the identification of themes emerging across the data.

The most important and innovative method used by the project for collecting data on punctuation knowledge was to capture oral discussions by children in the focal group while engaged in joint problem solving tasks. The significance of this technique is that it represents a more powerful method of collecting insights into young children's thinking than does retrospective examination of writing, or one-on-one discussion between a child and a researcher (both techniques that have dominated the few existing studies of punctuation at any age level).

Three exercises were developed. The first comprised a text with several boxes marking points where punctuation might be required. The task for the children was to make a joint decision about whether punctuation was needed and if so which mark should be inserted. In the second exercise each group faced a laptop computer showing the beginning of a story. The group's task was to continue with the story, dictating each move to a typist researcher. The third exercise text had correct, incorrect or missing punctuation and groups had to make a joint decision about which was which. All exercises were designed to take about half-an-hour, thus minimising disruption to the children's work in the classroom.
There are some qualifications to be made about this technique. The identification of punctuation requirements during a group task could be different from the way an individual might work. Thus no claim is being made that the behaviour of the group in an exercise is necessarily the same as any individual member when composing. The children have to be comfortable with the setting and the researchers, feel comfortable with each other, and have to be sufficiently interested in the exercise for them to treat it seriously. However, the overriding advantages were that one-on-one sessions between young children and a strange adult were avoided and the focus was on encouraging the children to talk with each other rather than with the researcher. By having children of approximately similar ability, by having three children, and by having a problem solving task that required agreement between the children, there was considerable encouragement for them to engage in discussion with each other. The researcher's function was to facilitate such talk by (a) participating as little as possible, (b) avoiding creating agendas for the children, (c) transferring children's questions and statements to each other rather than responding to them, and (d) encouraging them to stay on task if necessary. The success of this strategy is indicated by the lengthy and very rich project data in relation to child talk about punctuation.

Results

Rather than deal with results under the objective headings, evidence relating to particular objectives has been incorporated such within more general themes below.

Result 1

Since the project director's previous ESRC projects on young children's understanding of punctuation, a major change had occurred: the imposition of a National Literacy Strategy, and in particular the Framework For Teaching document that was trialled extensively, both officially and unofficially, in 1997, and published as policy in 1998. This document laid down a curriculum programme in three areas: Word Level Work (principally phonics, spelling and related elements), Sentence Level Work (principally grammar and punctuation), and Text Level Work (principally comprehension and composition). This programme was laid out, term by term from the reception year to the end of year 6. The principal vehicle for delivering this curriculum is the Literacy Hour, which although not legally compulsory, was nevertheless adopted by most schools, including those within this study (although not without some minor amendments in a couple of cases). The NLS Framework For Teaching documentation is essentially a set of expectations for what teachers should be teaching, a set of assumptions about what is appropriate for children to be taught at particular ages, and thus, essentially, a set of assumptions about what children are capable of learning and understanding at specific ages.

As the strand title Grammar and punctuation indicates, expectations about punctuation and its teaching are conspicuous and fairly detailed. However, in a retrospective justification for the Framework For Teaching prescriptions written by Beard (DfEE - No date) it was notable that he had almost nothing to say about punctuation, citing briefly only two studies and summarising the position in the executive summary as, p4, "Grammar and punctuation are currently being studied in ways that reflect better-informed notions of what they represent". As the research reported here is one of these studies (and probably the only one), and as this study has been carried out while schools are operating within the context of the National Literacy Strategy, the results have to be viewed within that context. The study is in a position to offer to evaluate the appropriacy of the expectations and assumptions of the Framework For Teaching.
Punctuation is set out in the Framework for Teaching as a linear process in which marks and concepts are introduced in a specific sequence. There is relatively little evidence of an expectation for revisiting areas, save for the notion of revision, mainly occurring later in the sequence. We can only assume, given the nature of the language used, that when a mark/concept is introduced it is meant to be learnt and understood at that time, for instance (Year 2, Term 2): “identify speech marks in their reading, understand their purpose and use the term correctly”.

Our major results are at odds with this. The central aim of the project was to map the development of understanding of punctuation, and the results suggest that it is anything but simply linear, that there are huge differences between children, between schools, between ways of understanding concepts associated with punctuation, considerable uncertainty about punctuation, and that some teaching practices may be contributing to masking children’s true levels of knowledge and understanding. Thus, there can be no neat, simple and easy account of the development of children’s understanding of punctuation, and the documentation which fully describes this development will be long and complex. However, what can be said is that despite there being some clear evidence of positive changes as children move through Key Stage 2, the levels of understanding of punctuation in year 6 are still quite limited for many, if not most, children. The children forming the focal groups in this study were, as indicated earlier, middle ability children; if their understanding of punctuation is limited, then it would suggest that many more children of lower ability are also insecure about punctuation. The results seem to contradict any implicit assumptions that by the end of Key Stage 2 children will be confident in their understanding of the nature of punctuation in relation to most punctuation marks. This will be expanded on below.

Result 2

It is clear from the project data that positive changes in children’s understanding and use of punctuation do take place. Analysis of this data reveals a number of significant trends.

(a) A shift away from the use of graphic principles to either linguistic or structural principles.

Previous projects by the award holder had shown that the youngest children (Key Stage 1) rely heavily on graphic principles to place and discuss punctuation. Thus full stops get placed randomly by appearance, at ends of lines, at ends of pieces and so on. While this extreme form of graphic punctuation was not apparent within the work of year 3 middle ability focal children, there was nevertheless consistent evidence of the influence of graphicity. Children relied heavily on marks “looking right” as objects (even making shapes with their hands to demonstrate) and as an indication of whether placement was correct (“I just saw it like that”). They frequently used graphic terminology for objects (a curly line at the top, little commas, flying commas • all for the apostrophe), as well as indicating rules (e.g. “putting in the middle of stuff” for the omissive apostrophe). This graphicity was seen in the constant use of the expressions “sixty-sixes” and “ninety-nines” for speech marks and in graphic-oriented rules (a capital letter always has a full stop before it; an ‘s’ at the end of a word has an apostrophe before it). There was a clear trend away from graphic-oriented explanations for usage as age and experience increased, but manifestations of graphic concepts were still apparent in year 6.

What began to replace graphic concepts were more linguistically-oriented concepts. Thus children began to talk about elements making or not making sense. They used terminology more appropriate to the formal discussion of punctuation: “because the sentence carries on,” “because all of it’s saying
the sentence” or “it couldn’t be a full stop because it’s like a sentence when it says ‘didnt like carrots’”. There was even, though in only two cases in year 6, more advanced grammatical language used, e.g.: “...sentence is ermm/a subordinate clause/ and it wouldn’t really make sense of the...” (although the children were incorrect in identifying these elements as subordinate clauses). It might also be possible to include the more frequent references to pausing or breathing, although these were used in ways that raise very serious doubts about their usefulness to children (see below). Despite these changes towards a more linguistic approach, there was considerable inconsistency and, as will be indicated below, even in years 5 and 6, there was general failure to use grammatical language.

(b) A move from terminological confusion to terminological clarity

Reference has already been made to the reliance on “sixty-sixes” and “ninety-nines” for speech marks, but confusions went much deeper than this. For the youngest children the effort of distinguishing between the terminology of commas, apostrophes and speech marks, when all share huge visual similarity, was considerable (for instance year 3 mostly called speech marks and apostrophes “commas”). Even when the different terms were used they were persistently confused with each other, a confusion which ran long beyond year 3. When marks have identical or virtually identical shapes and when some versions of the same mark have dual or multiple functions (as with the comma and apostrophe) then the burden is considerable. It is no surprise that children (and teachers) resort to more graphic terms to help differentiate the marks, but the ease with which these graphic terms are adopted (probably because they are highly functional for children) means that they persist long after children are capable of using the precise terminology. As an example of this, both years 3 and 4 almost completely failed to use the terms ‘apostrophe’ and ‘speech marks,’ and even though in years 5 and 6 there was much more use of correct terms, some children were still saying things like (all from year 6 and relating to the apostrophe): “I think we should have one of those high commas,” “one of those that goes at the top,” “I do one of them (pointing to apostrophe in earlier box)” and “it’s got a little commas, hasn’t it”. Similarly, in year 5 and 6 there were still children using “sixty-sixes” and “ninety-nines” four years after the Framework For Teaching stipulated that they should be able to “use the term correctly”.

(c) Increased accuracy in the use of punctuation marks

All the exercises and the test demanded that children marked punctuation onto a sheet, page or computer. Thus there is a lot of data both from group decisions, as in the exercises, and individual decisions, as in the test. Simple comparisons between years using the test are not legitimate as different tests were used for years 3/4 and 5/6. Nevertheless, because examples of particular general punctuation concepts existed in different exercises, so it is possible to claim that accuracy increases as age increases. On both speech marks and apostrophes there was a consistent increase in accuracy, although with grammatical punctuation a fairly even degree of success and failure existed across all four years.

Result 3

At all ages the responses to the challenges in the exercises were mostly both dynamic and strategic. Children revealed an interest in punctuation, a willingness to explore its issues, and operated with care to develop an appropriate response. At all ages the length of the conversations was impressive; it was often the researchers who felt obliged to close a session to stop the children being too long out of the classroom. While initial responses to a particular problem were sometimes immediate
and unreflective, or immediate and correct, almost all groups proceeded to work out a joint solution, often by exploring and eliminating inappropriate answers. Unfortunately, this did not necessarily lead to a correct response as the repertoire of knowledge available to the children was either absent (particularly and inevitably with the younger children) or not secure. It is the existence of exceptionally dynamic, rich and detailed conversations that has enabled clear identification of where and how children are insecure in their punctuation knowledge.

Result 4

While the general trend towards the use of more grammatical concepts, greater accuracy in terminology and better precision in placement is very positive, it is no longer sufficient to simply say it is positive; it must be considered in relation to the expectations and assumptions of the National Literacy Strategy. It cannot be considered in relation to anything else as there is no evidence of standards in punctuation from earlier studies. The evidence from this study reveals children less secure than might be expected by the Framework For Teaching documentation.

These are many worrying examples, but five major ones are:

(a) It was very rare for any child to use any grammatical terms relating to the parts of speech of any word or unit containing words. A very small number of children in year 6 mentioned adjectives or description, and a couple mentioned, though wrongly, subordinate clauses. This is despite the emphasis on grammar in the NLS Framework For Teaching and the document on Grammar For Writing having been in use for two years.

(b) Very few children at all ages (although there were more in years 5 and 6) explicitly identified the presence of a list in two of the exercises. This is despite commas used to mark items in a list being a Key Stage 1 expectation, and despite conversations related to pieces of text containing lists sometimes lasting up to seventy or eighty turns.

(c) While there was a generally strong performance for inserting apostrophes correctly in both 'possessive' and 'omissive' examples in all four years, this apparent achievement fell apart when the children were faced with a box inserted in "mornings". In both year 5 and 6 half the groups inserted an apostrophe before the 's'. This strongly suggests that whatever was causing the success with the boxes in "didn't" and "Toms house," it could not have been a secure understanding of the apostrophe.

(d) While there was a trend towards more grammatical usage in relation to punctuation, the predominant concepts used to explain grammatical punctuation were breathing and pausing, rather than the grammatical principles that might determine whether it was appropriate or not to breathe or pause. The project data suggests that the use of notions like breathing and pausing actually retards the rate at which children move towards grammatical placement of punctuation, and that the ways in which breathing and pausing might be useful analytical tools are largely a mystery to the children, who persistently used them inappropriately. Notions of breathing or pausing as explanations of punctuation for children were inherently confusing, and yet were widely used in classrooms by teachers. The younger children (and most of the older ones) could repeat the mantra that a comma or a full stop represents a pause for breath, but locked themselves into self-fulfilling prophecies trying to demonstrate this. Two children would each read aloud a line to indicate their views about whether a comma was needed. The one who wanted a comma left a space and used an emphasised deep breath, the other rushed and did not pause for a breath. Neither had the
grammatical tools that would enable them to resolve their difference. Thus each justified
their own action to the other and no development in understanding was achieved. Even among the
increasing success in placing punctuation into texts, there were often considerable differences
between and within groups about why such a mark might be used. Thus even when groups at all
age levels successfully marked a box or inserted/changed a punctuation mark correctly, the
discussions between the children made it clear that there were very different justifications being
advanced by individual children, and that often the resolution leading to a correct response seemed
to be based more on intuition than explicit reasoning.

Result 5

As indicated above, as a result of the NLS Framework For Teaching teachers are for the first time
spending a lot of time on teaching punctuation throughout Key Stage 2. Observations of this
teaching suggest that punctuation sessions were usually well-prepared, sometimes lively, involved
various pre-prepared visual aids and, as a demanded by the NLT Framework For Teaching, had some
degree of interaction. Punctuation lessons usually began with a teacher-led session involving some
demonstration with a small amount of child participation, usually children responding to teacher
questions. These sessions tended to be followed by a task based on completing a worksheet or
workbook page. Often the immediate individual task for many children was one unrelated to
punctuation as not all groups worked on the same task, at the same time or, as a result of
differentiation, some children may not have followed up the class lesson because the task was
believed too complex for them.

The precise effect of this teaching is impossible to measure; this project was not directed to
formally evaluating instruction. Nevertheless, it is likely to have played a major role in the
development and change that took place. In the first place it directed children's attention
specifically to punctuation and provided experience and explanations of punctuation concepts as
well as demonstrations of how to use it. The transcripts of the children's discussions during
exercises show that on several occasions there was reference to something that had been dealt with
in instructional sessions (although what the children had to say was not always accurate in respect
of punctuation knowledge).

However, the project's data suggests a number of concerns about classroom practice:

(a) The evidence from classroom observation and examination of children's written work
suggest that this teaching is overwhelmingly instructional and largely based on exercises that are
often narrow in scope and on which children can score highly, largely because of the ritualistic
nature of the exercises. There is, of course, nothing wrong with using instruction followed by
exercises; it is a well-established and, in a classroom setting fairly necessary technique.
However, when a piece of teaching sets up a specific focus on the particular use of a punctuation mark and it
is then evaluated by an exercise involving a set of near identical examples, questions have to be
raised about the level of understanding needed to complete such exercises. Even in the limited
number of lesson observations children were seen completing exercises ritualistically (e.g., copying a
list of names first, then writing all the apostrophes alongside each name, and then finally running
down the list writing the letter 's' at the end of each apostrophe).

Given the ritualistic nature of many of the pencil/pen and paper exercises in classrooms, the
project's fairly substantial collections of writing from the focal children show relatively few
instances of extended unaided writing, something that would provide a greater challenge for
children in using punctuation and, consequently, would provide much better feedback for a teacher about the children's real level of understanding. After all, ultimately success has to be measured by whether people use punctuation correctly when writing unaided different kinds of texts.

(b) As identified in Result 3, the dynamic discussions that took place in the exercises were passionate and intelligent. This suggests that instead of relying principally on individual page-based exercises, it would be useful to extend the range of techniques by having some cooperative punctuation problem solving. While our observations of classroom practice were limited, not one of the sessions observed built in any significant opportunities for discussion between children about punctuation. In an instructional session, even a very interactive one, it remains the case that most children in the class will not participate orally (although of course this does not necessarily mean a lack of attention or learning). Group exercises (involving at least three children) would allow children to debate with each other, would allow shy or anxious children more freedom to express concern about punctuation and would encourage strategies for thinking through problems in punctuation. Children could then report back on the different kinds of discussions. Certainly the engagement of the children in punctuation-based discussions within the project's exercises was intense, often produced very high levels of problem solving, and forced children to engage actively in exploring punctuation concepts.

(c) Some of the concepts used in association with punctuation are fairly abstract, and yet are used frequently by teachers. The reliance of the children and teachers on notions of breathing and pausing have already been referred to in Result 4(d) and there is also the notion of 'possession' in association with one use of the apostrophe (and it is used as part of a definition by the NL Framework For Teaching). The project data shows that great care needs to be taken with the use of such concepts. There may be an argument that while children do not have more advanced grammatical knowledge, reliance on such explanations may be necessary, but these carry with them some problems. When a personal name is used in association with an object (as in “Toms house”) the older children (and some younger ones) invoke ‘possession’ as justification for inserting an apostrophe, and this can be imagined fairly concretely by children. However, this fails to help them when faced with something more abstract, such as “two weeks time”. Over-reliance on particular forms of evidence can prevent children from identifying other manifestations.

The case of breathing and pausing is different in that the concepts are often simply wrongly applied by teachers and subsequently cause children considerable confusion. While it is true that one could pause when a grammatical punctuation mark is reached in a text being read aloud, and that sometimes it might be highly appropriate to do so, always pausing would in many cases lead to quite strange oral renditions of text, and perplex children when writing. Even more problematic is the case of taking a breath, which in the way teachers talk about it is often used in association with pausing as if the two were the same thing. It is quite ridiculous to suggest to children that a comma or a full stop are where a breath is taken, and anyone who did breathe at each grammatical punctuation mark would be thought of as extremely odd. Our data (as indicated earlier) reveals so many children (and this includes year 6 children) utterly confused as a result of trying to apply teacher prescriptions relating to breathing and pausing. There seems to be a significant failure among many people, including teachers, to understand that talking about breathing or pausing can actually lead children away from understanding the grammatical reasons underpinning the use of punctuation.
See outputs and impacts

Outputs

Although there are no formal outputs yet from the project, a substantial developing working paper has been submitted with this report. This working paper is developing background for writing a book. This book will be not only be an overview of this project but also of the previous two ESRC projects of award holder. Such a book will provide for the first time a comprehensive overview of the development of children's understanding of punctuation up to the end of primary education (in the UK) and elementary education in the US. It will also provide an overview of the history of teaching punctuation.

In addition to the work on the book papers will be given at conferences, and in this respect two papers have been accepted for this year’s September BERA conference.

Impacts

The project team have been approached by Radio Four who are making five programmes about punctuation for broadcasting later in 2002. One of these is to be about the teaching and learning of punctuation, and work of this ESRC project team has been incorporated in the programme. These teaching and learning programme was recorded at the beginning May and will be broadcast during Autumn.

There are two potentially important lines of future research. Given the limitations and insecurities found in year 6 children by this project, it would be extremely valuable to understand how children’s knowledge of punctuation progresses during secondary education.

The second area relates to the teaching of punctuation. There are clearly weak areas in the teaching of punctuation and it is difficult to see any significant differences between contemporary materials and approaches and those revealed in textbooks and workbooks across the twentieth century. A study that could explore more developmentally appropriate approaches to punctuation might significantly improve children’s understanding.