

Literacy in the secondary curriculum

David Wray

Abstract

The much-signalled extension of the National Literacy Strategy from primary to secondary schools is now in full swing and many secondary teachers are actively looking for practical guidance on ways forward with this national priority. One way of providing such guidance is to outline a common language with which secondary teachers of all subjects can discuss the role of literacy within their subjects. This article puts forward one possible way of developing this common language, by building on the work of Freebody and Luke (1990) in Australia who suggest a literacy resource model. This model is applied to the teaching of literacy within the three core subjects of English, Mathematics and Science.

Introduction

Literacy, along with numeracy, has been identified as a cross-curricular priority in the national educational strategy. Resources are being made available which aim to help secondary schools develop and implement literacy policies with a view to building on the experiences of pupils as they emerge from primary schools where the National Literacy Strategy has been having an effect. The recent publication of such documents as *Language for Learning in Key Stage 3* (QCA, 2000) and our own *Literacy in the Secondary School* (Lewis & Wray, 2000) makes it clear that literacy in the secondary school context can no longer be seen as the preserve of English departments. All teachers are seen as having a responsibility for the development of literacy in their pupils. The challenge for teachers and schools is to develop pupils' literacy so that it reflects the diversity of social, technological, cultural, linguistic, and economic contexts of which it forms a part.

What do we mean by literacy?

In order to implement successful literacy policies, teachers and schools need to have an understanding of the nature of literacy and what counts as successful literate performance in various curriculum subjects. Literacy is clearly a language-based activity and a definition must begin with an understanding of the nature of language, which can be defined as a system of signs used by a group of human beings to construct

meaning. Signs are selected and combined to form symbols such as words, images and sounds. Members of cultural groups make and share meanings by selecting and organising these symbols into extended messages called texts to serve specific cultural and social purposes. Texts can be defined in the widest sense as coherent and meaningful forms of communication created through units of spoken or written (or non-verbal) language.

Literacy involves particular social practices of reading and writing these texts in a range of contexts. It is not an independent set of skills, applied differently on different occasions, but is inseparable from the social practices in which it is embedded. Literacy always occurs to meet particular purposes and it is always embedded within larger practices, for example, running a home, completing an assignment, organising an event, giving orders, exchanging information, being at leisure.

Language is therefore the system of signs that is used for thinking and making meaning in a culture, whereas literacy refers to the ways in which socially-situated individuals use sign systems in the practices of reading and writing.

The National Literacy Strategy implies a definition of literacy that focuses on the development of skills of reading, writing and spelling. There is extensive evidence, however, to demonstrate the interdependence of speaking, listening, reading and writing, and so oral language must also be taken into account. A definition of literacy that would accommodate such interdependency would be something like:

Literacy is the ability to read and use written information and to write appropriately for a range of purposes. It also involves the integration of speaking, listening and critical thinking with reading and writing and includes the knowledge which enables a speaker, writer or reader to recognise and use language appropriate to different social situations.

To develop these interrelated abilities requires an integrated view of literacy in the curriculum and a pedagogy that can emphasise three levels of knowledge – a knowledge of the systems of literacy, a knowledge of the purposes of literacy, and a critical awareness of the uses of literacy in social contexts.

Literacy systems

An emphasis on the systems of literacy would stress how adequately individuals were able to perform in reading, listening, writing and speaking in a range of contexts. This would include the ability to recognise and use the complex systems of signs and conventions by which messages are conveyed in our society.

The focus at this level would be on using texts in ways that demonstrated an understanding of the patterns and conventions of language and on making the textual features of language make meaning in social situations. It would emphasise the mechanical skills of reading, writing, spelling, turning on a computer, keyboarding, searching a database, etc.

Literacy purposes

An emphasis on the purposes of literacy would involve focusing on the meaning aspect of literacy in recognition of the fact that literacy acts and events entail a specific content. It would stress the ability to engage in the purposeful use of various types of text to discover and exchange meaning as well as the ability to use various modes of communication such as books, letters, email, electronic and print media.

The focus at this level would be on using texts in ways that demonstrated an understanding of what makes texts appropriate or inappropriate, adequate or inadequate, in a given context. It would require providing pupils with opportunities to use texts and technologies to do things in the world and to achieve personal and social purposes in the contexts of school, work and everyday life.

Critical awareness

An emphasis on critical awareness of the uses of literacy would involve focusing on the socially constructed nature of human meaning-making systems. In order to be able to participate effectively in a social practice, such as reading and writing science text, learners have to be socialised into it. Yet social practices and their meaning systems are always selective and, unless individuals are allowed to understand the basis for such selection, they can only ever be slavish users of these meaning systems, rather than active contributors to their development.

The focus at this level would be on using texts in ways that demonstrated an understanding that these texts were always partial and selective: that they represented someone else's interpretation of a set of events or phenomena. The development of this understanding would make the difference between merely being socialised into literate procedures and being actively

able to make judgments about texts. It would require providing pupils with opportunities to innovate, transform and recognise alternative possibilities when working with texts.

Approaches to literacy education

To say that literacy education is controversial is to understate the point. Literacy education has been influenced by many theoretical insights, often contradictory, and the literacy teaching practices developed in schools are inevitably selections from the range of approaches implied by these theories. It is possible to discern three major approaches to literacy education, each based on its own implicit assumptions both about how children learn and about what the goals of literacy education should be. Literacy teaching in any given situation is, however, rarely founded purely on any one of these approaches, but tends to incorporate elements of each.

- *Holistic approaches* emphasise the personal construction of meaning through literacy. They tend to envisage skills being acquired naturalistically through experience with whole texts and stress the provision and recall of authentic experiences in and out of the classroom. They also emphasise the role of literature in literacy acquisition. These approaches are sometimes referred to as 'whole language' approaches.
- *Skills-based approaches* emphasise the toolbox approach to literacy, with learning specified in terms of skills and sub-skills, which, used in conjunction, produce effective reading and writing. They tend to break down reading and writing activities into teachable elements such as phonic rules, grammar, textual structures and comprehension and often operate a fairly strict grading of the order in which learners are introduced to such elements. The current National Literacy Strategy teaching objectives are framed in this skill-based way, although the strategy as a whole makes a claim to be holistic in its emphasis upon whole texts as a basis for the teaching of skills.
- *Critical literacy approaches* emphasise the fact that being an effective reader and writer involves understanding and using not just the points of view expressed in a text but also those not included. They focus learners' attention on the choices made by readers and writers of texts as well as the location of textual meanings in the shared understandings of particular communities.

A particularly useful way of bringing these approaches together, and of applying their insights to literacy teaching at all levels, is the formulation suggested by Freebody and Luke (1990). They try to outline the kinds of resources which literacy learners need to develop in order to be fully and functionally literate. Their argument is that to become fully

participant members of a literate society, pupils must develop this repertoire of resources or practices for interacting with text. This repertoire enables pupils to move beyond decoding and encoding print to understanding and using texts on several levels for a variety of purposes.

The four kinds of literacy resources required are, according to Freebody and Luke (1990):

1. *Code-breaking*. This entails knowing about and using the relationship of spoken sounds to the graphic symbols used to represent those sounds (including punctuation and formatting conventions). In NLS terms this would include word and sentence level knowledge. The emphasis is on decoding and encoding the codes and conventions of written and spoken texts including:
 - recognising and using the alphabet, sounds in words, whole words, letter/sound relationships;
 - spelling accurately and understanding the functions of spelling;
 - recognising and using grammar and vocabulary including punctuation and intonation;
 - recognising and creating patterns of letters, sounds, words, clauses, sentence and text structures.
2. *Meaning-making*. This entails knowing about and using the meanings conveyed by written and spoken texts (including vocabulary and clause meanings and the conventions and components of various genres). In NLS terms this would encompass text level knowledge. The emphasis is on comprehending and composing meaningful written and spoken including:
 - drawing on prior knowledge to construct meaning from texts;
 - comparing one's own experiences with those described in the text;
 - interpreting and using literal and inferential meanings of words, clauses, sentences and texts;
 - understanding the way texts are constructed to make meaning.
3. *Text-using*. This entails knowing about and using the functions of various text types (including the purpose-form relationships of various genres and the social and cultural expectations associated with different forms of communication). The emphasis is on understanding the purposes of different written and spoken texts including:
 - understanding that different cultural and social contexts shape the way texts are structured, their tone and degree of formality;
 - using appropriate text types for particular purposes both inside and outside school;
 - recognising that each text type has particular structures and features;
 - understanding the options involved in using a text to convey particular meanings effectively.

4. *Text-analysing*. This entails knowing about and using the cultural and ideological bases on which texts are produced and used (including how texts influence and position readers, and listeners). The emphasis is on understanding that written and spoken texts are not neutral but represent particular points of view and exclude others including:
 - recognising the author or speaker's purpose in creating a text;
 - understanding that texts influence people's ideas;
 - recognising opinions, bias and points of view in a text;
 - understanding how texts are crafted according to the views and interests of their authors;
 - identifying the ways in which information or ideas are expressed to influence readers' or listeners' perceptions;
 - deciding to endorse the position taken by a text or presenting an alternative position.

Luke and Freebody (1999) claim that:

"The proposition here is that these repertoires of capability are variously mixed and variously orchestrated in proficient reading and writing in societies such as ours. As with other complex, culturally determined tasks, learners need distinct spaces for acquiring and practising these domains, as well as ample room to practice their integration in meaningful events."

The underlying assumption of their model is that these resources are not hierarchical or developmentally based. We are asked to move beyond psycholinguistic and cognitive versions of literacy development, and to view literacy as a socially constructed practice. If we view learners' ability to be critical with regard to the texts they read and write as being advanced or higher order cognitive skills, we do little justice to the complexity, diversity and essentially social origins of literacy practices in homes and schools.

Literacy in secondary schools

As pupils near the end of their primary years of schooling, they begin to experience a separation of areas of knowledge into school subjects, each of which makes distinctive literacy demands. Early on in their secondary school experience, these subject specific literacy demands begin to become even more salient. Literacy is fundamental to all curriculum subjects in that these tend to rely on texts either for the delivery of knowledge or for the assessment of pupils' grasp of it. In each school subject, literacy is involved in building knowledge and skills. The teaching of these subjects, therefore, needs to be planned and carried out with a clear sense of the particular literacies, such as the forms of text and the specialist language, that play an important part in constructing the knowledge of the subject. Thus, for example, the literacy required

for learning mathematics differs from that required for history, and this is different again from that required for study in English. The texts to read are different; the crucial vocabulary is different; the texts pupils are expected to write are different.

This means that all teachers have a responsibility for the development of the literacy of their subjects. Secondary teachers are experts in their subjects and in the literacies of these subjects. Such literacies rapidly become complex and tied so tightly into the ways a subject represents itself that it would demand extraordinary knowledge to be expert in more than one or two subjects. Subject literacies, therefore, need to be taught and developed by subject experts.

The traditional organisation of primary schools means that literacy learning can take place in all curriculum areas. Teachers are generally alert to the literacy learning opportunities in work which often draws together a number of curriculum areas, and can provide explicit instruction in composing and comprehending texts relevant to that work. Secondary schools are structured in ways that separate subjects, which are taught by different teachers. This entails a *de facto* spreading of responsibility for pupils' literacy learning.

In both primary and secondary schooling, planning for the teaching and learning of literacy must recognise that literacy is both a medium for teaching and learning, and an object of explicit teaching. Curriculum development needs to involve making plans for literacy teaching and learning in both senses, including analysing the ways in which different subjects use spoken and written language, and becoming aware of the technical language used in these subjects, as well as the text types most commonly found.

Literacy practices in subject areas

The four literacy resources described earlier can provide a useful framework for describing possible literacy practices in subject areas. Some examples are described below for the three core subjects of English, Mathematics and Science.

Literacy in English

Code-breaking

Decoding and encoding written and spoken texts, which might include:

- using appropriate technical terms during reading activities such as letter, word, title, page, cover, illustration, author;
- explicitly discussing the use of cohesive ties in texts, such as the use of pronouns to refer to nouns, either anaphorically (*I have read several books by this*

author and they have all been good.) or cataphorically (*In his 1997 book, Smith argues strongly in favour of post-modernism.*);

- recognising connectives that express chronological (first, next, then ...) or logical (due to, however, consequently ...) relationships.

Meaning-making

Comprehending and composing written and spoken texts, which might include:

- describing the main characteristics of a scene, person or animal in an extended text;
- interpreting the use of imagery, such as similes and metaphors;
- interpreting the features that indicate personal opinions about issues (e.g. tone of voice and facial expression in spoken language; modal verbs and adjective choice in written texts);
- understanding the main elements of plot;
- using comparisons and contrasts to support arguments for and against an issue.

Text-using

Understanding and using texts for a range of purposes, which might include:

- representing events or information in texts through timelines, story maps, or flow charts;
- using narrative to write imaginative stories;
- using texts to negotiate transactions such as filling in application forms;
- following sets of instructions to achieve an end product;
- synthesising information from different sources and using this to put forward a reasoned argument.

Text-analysing

Understanding how texts influence and position readers and listeners, which might include:

- discussing the effects in narrative texts of reversing male and female roles;
- thinking about the possible reactions of particular readers to texts with overt biases (e.g. racist, sexist material);
- comparing different representations of similar events (e.g. reports in different newspapers);
- discussing the ways that people can be represented in texts (e.g. suggesting and discussing texts in which particular groups are represented positively and negatively).

Literacy in Mathematics

Code-breaking

Decoding and encoding written and spoken texts, which might include:

- recognising and using content words specific to the subject (e.g. cosine, parallelogram);
- recognising and using appropriately content words which have a different meaning in everyday English (e.g. product, ray, multiply);

- recognising and using symbols such as numerals and various mathematical signs (e.g. +, −, =, %);
- using prepositions to signify different meanings (e.g. The temperature increased to 5 degrees; The temperature increased by 5 degrees; The temperature increased from 5 degrees.);
- recognising and using different ways of expressing the same information (e.g. $3 + 4 = 7$, The sum of three and four is seven, Three pence and four pence make seven pence);
- recognising that the order in which information is presented in mathematics sometimes conflicts with the order in which it is processed (e.g. Take away 6 from 12).

Meaning-making

Comprehending and composing written and spoken texts, which might include:

- interpreting questions that can be more complex than the number facts they contain (e.g. I had 4 apples. Mary had 2 more than me, and Tom had 2 more than her. How many did we have altogether?);
- interpreting words that mean different things in different contexts (e.g. Which number is three more than 5?; How many more is five than 3?);
- interpreting information conveyed through a mixture of symbols, prose and diagrams;
- interpreting information in diagrams, tables, charts and graphs;
- hypothesising in order to solve problems.

Text-using

Understanding and using texts for a range of purposes, which might include:

- following instructions and instructing others on how to carry out particular activities;
- using descriptions to define and describe shapes;
- using information from a number of sources to write an account of the history of number;
- using arguments to justify a strategy for solving a problem;
- arguing for and against different ways of approaching a proof by using discussion writing.

Text-analysing

Understanding how texts influence and position readers and listeners, which might include:

- identifying ways in which mathematical data can be analysed and represented to influence people's ideas;
- comparing and contrasting ways in which different cultures approach mathematical problem-solving;
- recognising different points of view in accounts of the development of mathematical ideas.

Literacy in Science

Code-breaking

Decoding and encoding written and spoken texts, which might include:

- spelling scientific terminology;
- using a range of connectives to express relationships such as cause and effect, sequence, comparison and contrast;
- recognising reference words (e.g. this, those, it) in scientific reports;
- recognising the use of passive voice in science texts;
- using scientific abbreviations and symbols;
- identifying the origins of scientific words.

Meaning-making

Comprehending and composing written and spoken texts, which might include:

- describing the component stages of a scientific process;
- interpreting cause and effect relationships in such processes;
- interpreting and using scientific terminology (e.g. velocity, mass, circuit);
- interpreting information in diagrams, tables, charts and graphs;
- using the Internet to download information from relevant web sites;
- using headings, main ideas and supporting details to gather information from reference books;
- organising information, ideas and arguments, using a variety of media;
- selecting, summarising and organising ideas and information from a variety of sources.

Text-using

Understanding and using texts for a range of purposes, which might include:

- following instructions for carrying out experiments;
- describing observations of chemical processes;
- using report genre to compare, contrast, predict, suggest causes, state conclusions, or principles;
- using explanations to describe various processes;
- using discussion to contrast arguments for and against particular uses of the environment.

Text-analysing

Understanding how texts influence and position readers and listeners, which might include:

- assessing the ways science is reported in newspapers and magazines;
- evaluating the effects of human activities on the environment and the ways this is described in scientific and populist accounts;
- recognising points of view in a discussion about space travel and being aware of alternative points of view not represented there;
- presenting an alternative position to that taken in a media account of a scientific issue.

A common language

As argued earlier, the literacies of individual subjects are inextricably bound up with the complex ways in

which these subjects represent their own forms of knowledge. The discourse of a particular subject can sometimes be impenetrable to those who are not 'inside' that subject. This makes it very difficult to achieve the dialogue between subjects on which the successful cross-curricular development of literacy depends. One of the major attractions of the literacy resource model suggested by Freebody and Luke is that it provides a common language about the aims of literacy teaching through which teachers of all secondary subjects can develop a coherent approach. Thus it provides a useful extension to the QCA (2000) *Language for Learning* approach.

The model also adds a crucial dimension to that currently implicit within the National Literacy Strategy approach to Key Stage 3 in its explicit attention to critical literacy. Literacy is not, and never can be, limited to the functional application of a set of skills. Rather, it involves knowledge and understanding about the social location of literate practices and the ability to distance oneself from the use of literacy to comment and reflect upon this use. Such a critical

approach to literacy is, arguably, fundamental to the development of skilful and mindful literate members of society and has a place not just in secondary schooling but in primary as well.

References

- FREEBODY, P. and LUKE, A. (1990). "Literacies programs: debates and demands in cultural context." *Prospect: Australian Journal of TESOL*, 5(7), 7-16.
- LEWIS, M. and WRAY, D. (2000) *Literacy in the Secondary School* London: David Fulton.
- LUKE, A. and FREEBODY, P. (1999) "Further Notes on the Four Resources Model", *Reading Online*, <http://www.readingonline.org/research/lukefreebody.html> (Accessed 22nd September, 2000).
- QUALIFICATIONS AND CURRICULUM AUTHORITY (2000) *Language for Learning in Key Stage 3* London: QCA.

CONTACT THE AUTHOR

David Wray, Institute of Education, University of Warwick, Coventry CV4 7AL