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ABSTRACT

This article explores research evidence on the teaching of reading from eight specific points: (1) readers engage in a complex, multi-level process that involves knowledge of sound-symbol relations, spelling patterns, vocabulary, sentence structures, propositional meanings, and realms of meaning beyond individual propositions; (2) literacy learning is not to be simply and straightforwardly equated with teaching in school; (3) it is an active process, driven and shaped by the learner's intentions; (4) it operates most characteristically on a number of different linguistic levels simultaneously and is not made easier by being broken down into apparently simpler elements that are then taught separately; (5) Children vary in the amount of direct literacy teaching they need, but all do much of their literacy learning tacitly, implicitly; (6) there are many important literacy lessons that only powerful texts can teach; (7) literacy is laden with the values of the social context that both surrounds and is shaped by it; (8) there is no substitute for watching how, when, where, and why children learn reading and writing and responding to the efforts of adults to help them. It is concluded that successful literacy teaching can only be accomplished when these eight research foundations are followed. (Contains references.) (Author/NAV)

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Eight Lessons from Research into Literacy

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Eight Lessons from Research into Literacy Henrietta Dombey, Department of Primary Education, Brighton Polytechnic

(This paper formed the basis of a talk to the Centre for Language in Education on 1 June 1991.)

This paper sets out some of the research evidence on which our practice and recommendations on the teaching of reading are based. It is not by any means comprehensive, but gives an indication of the wealth and complexity of research into reading and related areas in recent years. It is grouped into eight sections: eight lessons on reading and the teaching of reading.

I. Readers engage in a complex, multi-level process, involving knowledge of sound-symbol relations, spelling patterns, vocabulary, sentence structures, propositional meanings, and realms of meaning beyond individual propositions.

Ia The strategies adults use in tackling print

We know much more than we did about what readers do when they read. As Smith and Rumelhart have shown, effective reading is not the orderly, sequential, bottom-up process that commonsense would suggest (Smith 1971; Rumelhart 1976). Over a century ago Cattell's ingenious experiments revealed the speed of adults' perception of letters and words to be far greater when these are presented in coherent text, than when they are displayed in random order (Cattell 1886). We actually perceive letter shapes more quickly when our knowledge of language and the subject matter gives us some notion of what we might expect.

Smith would have us replace the conventional but discredited bottom-up model, in which we proceed from part to whole, from individual letter via progressive accumulation to propositional meaning and beyond, with a top-down model, in which hypothesis-construction at the level of meaning guides a search for lower level information. We find more persuasive Rumelhart's idea of simultaneous, multi-level, interactive processing. According to this, at one and the same time, information at any one of the linguistic levels can prompt us to make hypotheses about features at any



of the others. Simultaneously these hypotheses operate top-down and bottom-up. As we read a text, a particular detective story perhaps, the wider context - the language and events of the preceding chapters - gives us a general expectation about the kind of events that might unfold in this chapter, and the kind of language through which they will be realised. So far, top-down. But such top-down prediction cannot generate, except in the most unusual circumstances, precisely worded sentences, or even particular meanings. We read on to find out, precisely because we don't know.

So as we carry these general expectations in our head, we are also simultaneously noting letters and words, with little precise expectation (other than our knowledge of language and spelling patterns) to guide this process, certainly in the opening phrases of a new chapter. Thus we find ourselves making hypotheses in two directions: downward from context to events and all the other features of narrative that make us want to read it, and upward from letters to words, and words to sentences and the meanings they realise. Where there is agreement between these various hypotheses, we proceed in our reading. Where there is not, where, for example, we read that a character has suffered greatly from the consequences of a fire, and find this hard to understand in the light of what we know of his prudence in matters of insurance, we go back over the relevant words, both inspecting the letters carefully and also reviewing what we have learnt from the preceding text, until, on noting that the word is actually "fine", we are satisfied that we can achieve consistency between what we see on the page and what we are building in our heads.

Ib The strategies young children use in tackling print

It is not only skilled adults who read in such complex ways. We also know, thanks to the work of Yetta Goodman and Marie Clay, that unless we succeed in training them otherwise, young children go about the process of reading in much the same way as we do, bringing their expectations of what the text might say to the business of identifying the words on the page (Goodman Y 1976, 1990; Goodman et al. 1987; Clay 1972, 1982). These are the practices still dismissed as unhelpful "guessing" by those advocates of



the commonsense approach to the teaching of reading that is given the hospitality of the mass media. But close observation of what skilled readers and novice learners do is likely to be a better guide to how reading should be taught than uninformed and unreflecting "commonsense".

Deviations from the printed text are not all negative. The child who reads "said he" where the text says "he said", and "home" where the text says "house" is revealing that sound semantic processing is at work, and also in the first instance, that she has mastered something of the patterning of written language.

Of course we know that inexperienced child readers use such context cues with less skill and refinement than we do, and are much less adept than we are at combining the information they yield with the information provided by the letters on the page. We want to emphasize that no one set of cues is enough: if they are to learn to do what we do, children need to learn to make effective use of picture cues, semantic cues, syntactic cues and grapho-phonemic cues, and to use them in simultaneous combination.

2. Literacy learning is not to be simply and straightforwardly equated with teaching in school:

2a Children learn many powerful literacy lessons before they come to school.

Taking out of school learning first, we can say that we now know that children arrive at school at five or six having already learned many valuable literacy lessons. Rather more than twenty years ago, Dolores Durkin showed that a significant proportion of the six year olds starting first grade in Oakland, California (a community much less well off than San Francisco across the bay) could already read at second grade level or higher (Durkin 1966). Interestingly these tended to be the children of blue collar workers rather than the middle classes who followed the educators' advice and left literacy teaching to the schools. Another study in New York City showed that far from disabling the children as educators had argued, this "precocity" in reading gave them an educational advantage which persisted throughout their elementary schooling, and presumably beyond (ibid).



A few years later, Margaret Clark's work in Scotland showed that a number of British children could also read when they started school, even though this is of course at least a year earlier than first grade in the United States (Clark 1976). However, here too the profession was unwelcoming. Indeed the parents and children in her study often felt this proficiency should be kept an embarrassing secret, like bed-wetting. This at least has changed: in British reception classes today, early competence in reading is more likely to be recognised and welcomed.

But it is not just the high-achieving few who learn literacy lessons outside school. As a teacher on one of our in-service courses discovered, early literacy learning can start in the most apparently inauspicious circumstances. Three year old children on bleak Brighton Council estates can tell a telephone book from a recipe book, and know what is the purpose of each. They know where it says "Coffee" on the jarand can "read" the McDonald's sign.

The children who walk into our reception classes in September come to school having witnessed and participated in many "literacy events" to use Heath's term (Heath 1983). They know something of the purposes of literacy and something of its forms. They have even begun to control some of these and put them to use for their own purposes. As in so much else, where literacy is concerned children come to school neither empty vessels nor *tabulae rasae*.

Some children, mainly but not exclusively from middle-class homes, come to school having learned even more substantial literacy lessons. In his meticulous study of 128 Bristol children before and during their early years at school, Gordon Wells found that hearing stories read aloud was the single most powerful factor contributing to children's subsequent success in learning to read (Wells 1981a). The quality of the spoken language in which they were involved, the extent to which they played at writing and joined in such family writing activities as making out the shopping list were also important. But none was as important as listening to stories. Wells' research design did not readily yield this finding, since it was based on the taping of randomly selected 90 second bursts of talk



by means of a radio microphone, and so eliminated much story-telling activity, in particular the bed-time story told after the radio microphone had been taken off. But the snatches of day-time stories, read in time stolen from the domestic round, were enough to establish the association between hearing stories read at home and subsequent success in learning to read at school.

My own research shows something of the power and complexity of what goes on in the reading of bed-time stories to pre-schoolers (Dombey 1984). As their parents turn the pages, talk about the pictures and tell the sometimes familiar and sometimes new words of the text, the listening children are learning to make sense of what they hear-language detached from the here and now of the bedroom, language patterned over long stretches in coherent stories, connected and explicit monologues very different from the fragmented to and fro of conversation. They learn to relate the events, characters and settings of the pictures they are looking at and the words they are hearing, to experiences they have had, or have heard about or have encountered in other texts. The listening children become increasingly capable of making such connections for themselves, bringing richness to their reading and greater significance to their lives. At the same time they are also internalising the linguistic forms through which the stories and rhymes are realised.

But how does this contribute to the business of learning to read? Children who have listened to stories with pleasure and a growing sense of power can predict what may happen in the texts from which they are learning to read, and can predict much of the language that will make it happen. Of course it helps if the story is of a familiar sort - has something of the allure, is told through language in some way similar and delivers something of the satisfaction that the child is used to from the books that have come to mean so much at home. But even if the text in front of her is of that bizarre and often unsatisfying variety, the reading scheme book, where the resonant phrases are few and the semantic rewards are sparse, the child who has learned the language of books at home is likely to make an efficient job of learning this new kind of language. And as Clark showed in 1972, she can also put to use lessons learned about such crucial matters as wing the lines and page turning.

Furthermore we now know, notably from Carol Fox's work, that children who have taken in a rich diet of stories and made these their own, can produce, at four and five, their own stories of marvellous, controlled complexity (Fox 1985).

If as teachers we are going to build on what children bring to school, we need to have a clear idea of what that is. If we are (quite rightly) to be held to account for what children learn when they are in school, we must know, and be able to tell others, where they were at the start. We must know what they have learned, with their parents and others, in the years before school.

2b Particularly where they are encouraged to do so, parents can continue to help their children develop their literacy after they have started school.

We know the parental contribution to literacy learning does not stop at five. Morris found the beneficial effect of parental support for children experiencing difficulty in learning to read (Morris 1966). Hewison and Tizard found parental involvement similarly effective on the reading of children at all levels of competence, and from social backgrounds including those not usually seen in this light (Hewison and Tizard 1980). Their findings have been repeated in formal and informal projects all over the UK, in inner city and leafy suburb (Topping and Wolfendale 1985). Wherever teachers have prepared the ground carefully, organized the project thoughtfully and carried it out thoroughly, schemes involving parents in helping children's reading on a daily basis have helped children become more competent, more confident and more committed as readers.

3. Literacy learning is an active process, driven and shaped by the learner's intentions.

Behaviourism has certainly had its day as the explanation for how children do their most significant learning. Of course we have known for a long time that children are not just passive recipients of teaching, shaped by the processes of reinforcement. Piaget taught us long ago that children are active theorisers, and our observations of them in and out of school daily confirm this (Piaget 1959). But it was their encounters with the physical world that Piaget saw to provide children with the experience that leads to



8

more complex and adequate theories: he held language, and indeed adult mediation, to be of little importance to this process. However, in his quite extraordinarily wide-ranging and powerful work, Vygotsky demonstrated the way in which children use their language to transform thought (Vygotsky 1962). He also showed us that language learning is, like all learning, intensely social (Vygotsky 1978). Again, observation of children talking and listening in and out of school confirms this view.

From a linguistic perspective, more than thirty years ago, Chomsky showed the inadequacy of behaviourism as an explanation of language learning, and argued irrefutably that children learn language through making and testing hypotheses about how it works, against the evidence of the language that surrounds them (Chomsky 1959). Commonplace childish errors such as "I seed three sheeps" show this linguistic theorising at work. Halliday has since shown us that children do not engage in this process for its own intellectual sake, but do so in order to make the world more meaningful (Halliday 1975). Children extend their mastery of linguistic forms to expand their control of the physical and human world around them.

These lessons on the nature, power and origins of language have transformed the psychology of learning. Bruner has taught us that children's intentions are articulated, shaped and consolidated through language more powerfully than through any other mode of representation, and that these intentions shape all their learning (Bruner 1968). Children learn in order to make the world a more predictable and controllable place.

In this changed intellectual climate, teachers in the US, Canada, New Zealand and many other countries have found out that children learn best to read and write when their intentions are aroused and enlisted, when they learn what reading and writing can do for them, what literacy can help them be and become (Goodman et al. 1980; Smith 1983; Harste, Woodward and Burke 1984; Goodman 1986; Hall 1989).



4. Literacy learning operates most characteristically on a number of different linguistic levels simultaneously: it is not made easier by being broken down into apparently simpler elements, which are then taught separately.

When children are engaged in learning complex skills, such as learning language or learning literacy, we know now that they learn in complex ways. Over the last three decades, work on language acquisition has greatly expanded from the study of phonology and lexis. Inspired by Chomsky, the sixties saw studies of children's acquisition of syntax, the system that vastly increases the power of their phonology and lexis (Chomsky 1965, McNeill 1970). Halliday revealed the semantic development that both shapes and is realized through children's syntactic development (Halliday 1975). More recent studies have explored the roles children learn to play in the social relations that both frame and are frained by the potential for meaning that language makes available to them (Wells 1981b).

But there is no neat sequence in this learning. Children learn to master the phonology, lexis, syntax and complex rules of what can be said on what occasion, all at the same time, with negligible amounts of direct teaching (Garvey 1984; Tizard and Hughes 1984). Children do not learn their oral language piece by decontextualised piece.

As to learning the language of the written word, as my own research has shown, when children are read stories that engage their interest, complex language learning - of words, verb forms, phrase structures and sentence structures - goes on simultaneously and large!y unconsciously as the child is focussing on the characters and what they are doing, and pondering the consequences and reasons for their actions (Dombey 1984). Sometimes the attention shifts to the more mechanical aspects of reading as the child asks "Where are we now?", or takes pleasure in recognising a particular word, and the sense of growing independence this brings.

Work on reading and writing in school has shown similar complexity, as children learn to relate spoken sound to written sign, to spell or recognise



whole words, to predict or compose sentence structures of written language and to construe or construct whole stories, all at the same time (Gollasch 1977; Calkins 1983; Harste, Woodward and Burke 1984). Indeed we are learning that to detach one element from the whole and teach it, may make it harder for children to learn, and may make children likely to underperform.

5. Children vary in the amount of direct literacy teaching they need, but all children do much of their literacy learning <u>tacitly</u>, implicitly.

Where reading is concerned, Berdiansky, Cronell and Koehler showed that the variety of word patterns recognised by nine year olds in Texas demonstrates that they have, on everage, learned 166 rules of sound-symbol correspondence and 45 exceptions (Berdiansky, Cronell and Koehler 1969). No teacher would claim to have directly taught all these correspondences. But we all know from our own experience that many children need some direct teaching if they are to learn all these rules. However, children vary markedly in the amount of direct teaching they need. Some need much more help than others in putting the graphophonemic cueing system to work in their reading. Through studies of large numbers of children, Bradley and Bryant have taught us that raising their "phonological awareness", their awareness of speech sounds, can make a significant difference to the subsequent fluency and independence of children's reading (Bradley and Bryant 1983).

All children need to learn the complex phoneme-grapheme relationships of the English writing system. In the early stages of school literacy learning, large populations of children appear to benefit from such activities as playing "I spy", learning nursery rhymes by heart and sharing tongue-twisters, through which they are helped to see that spoken words are made up of sequences of separable sounds. But beyond this, it is not clear which children need how much direct teaching, either in recognising letter patterns as they read, or in reconstructing them as they write. We need to develop subtler ways of assessing, to ensure that teaching of this sort goes to the children who need it at the time when they can profit from it and not to those who do not need it or who are not yet ready to profit from



it. Certainly class lessons in phonic blending do not seem to have a beneficial influence on the fluency, accuracy or comprehension of all children, or even of most (Bussis et al. 1985).

6. There are many important literacy lessons that only powerful texts can teach.

Margaret Meek has shown us some of the subtle and compelling lessons of narrative (Meek 1988a). Among others, it can teach that although the text is unchanging, every time it is read it can yield something more; that stories can touch children's deepest and most urgent desires; how language can variously realise intentions; that the reader can conspire with the author to mean more than the text actually says; and how metaphor can help us make new meanings. Children need to encounter texts that will teach these lessons, not just through the teacher's reading aloud, but through their daily engagement with texts that invite personal exploration and speculation, that juxtapose words and pictures necessitating an active reading, one that can be shared, extended and contested. This thinking is reflected in the prose of the Cox Report, in the contents of the Programmes of Study, and in some of the Statements of Attainment, such as 2.3d: "find and appreciate meanings beyond the literal" (DES and the Welsh Office 1989).

7. Literacy is laden with the values of the social context which both surrounds it and is shaped by it.

As you may have noticed, we have tended to refer to "children" rather than "the child". Children are various. Some of that variety is to do with different styles of learning. The work of Bussis et al. has shown how strongly rooted and pervasive these differences are, and how important it is for teachers to take account of them, to work with the grain of children's learning styles, not against it (Bussis et al. 1985). But much of children's variety is to do with the different social worlds which they inhabit. Studies in recent years have made us more aware that children bring to school different experiences and expectations of literacy, and the differences are in kind not just in degree. Heath's work in particular has shown us just how significant such differences can be (Heath 1983). The



literacy lessons children learn in fundamentalist church services differ from those learned in the cornershop or the DSS office. The lessons learned at home also vary markedly between social groups. There are very many ways of looking at a picture book with a young child, ways that are shaped by the parents' experiences and expectations of literacy. Literacy is not a value-free technology or skill.

As adults do, children engage in literacy activities shot through with cultural and social significance. The techniques, the mechanical aspects, are embedded in language; meanings and values inhere in that language and in the situations in which literacy is put to use. Every text carries a social message and implies a social world. Unless we present children with texts that enhance their views of themselves, the world and its possibilities, we risk that a number will size up this arduous activity and decide that indeed it is not worth the effort.

Those who come from socially marginalised groups, the long-term unemployed, travellers, refugees uncertain where and how they will over settle or how much of their culture they will be able to cling to, are all like, to see little in literacy for themselves or their children. In the words of an articulate non-reader from an Arabic speaking home in Paris "Pourquoi lire quand on n'a plus de raison de le faire?" (Biarnes 1990).

Children in such situations are in particular need of texts that invite and reward them, and add to their sense of the world as a hospitable and controllable place.

8. There is no substitute for watching how, when, where and why children go about the business of reading and writing, and responding to the efforts of adults to help them.

In their different ways, Marie Clay and Yetta Goodman have taught us the value of subtle, informed observation, kid-watching as Yetta Goodman calls it (Clay 1972, 1982; Goodman 1976, 1990). This is the instrument that has led us to so many of our understandings about children's literacy learning. But it is not just a research instrument, to be used by outsiders coming into the classroom for their own purposes. The formative assessment it permits is essential to teaching that engages children at the most



appropriate level, in the most appropriate way. Unless you know where children are, what they have done, what they can do, how they go about it, what they think of what they can do, what they want to do next and what they find difficult but can do with your help (Vygotsky's "zone of proximal development") you risk expecting too much of them, under-challenging them, or taking them along too narrow or alien a path. The *Primary Language Record* is a superb demonstration of how teachers can be helped to organize and formalise this kid-watching in ways that focus it productively on the future and make assessment an eminently collaborative and communicable enterprise. It demands much of teachers, but those who stick with it declare that it significantly improves their teaching, and makes them more fully professional (Bussis et al 1985).

Implications

As we have outlined, we have learned many things in the past twenty years or so. To recap briefly, we have learned that skilled, experienced readers engage in a highly complex multi-level process. We have learned that much literacy learning takes place out of school, and that wherever it takes place, it is active, driven and shaped by the learner's intentions. It is also highly complex, operating on many levels, often simultaneously. We have learned too that all children do much of their literacy learning tacitly, as they strive to make meaning through their reading and writing, but children vary in the amount of direct literacy teaching they need. Good texts are crucial: many important reading lessons can be taught only by reading powerful texts. All manifestations of literacy carry a cultural freight: reading and writing are not neutral technical skills, but shape and are also shaped by the social context, the culture of which they form a part. And we have learned that if we want to know what children can do, there is no substitute for watching carefully how, when and why children go about the business of reading and writing.

To be effective in giving children access to the sort of skilled literacy that they will need in their lives ahead, our teaching needs to be built on the solid foundations of research knowledge of the sort we have outlined.



14

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