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Progression in Writing: A review of research

David Wray & Jane Medwell

University of Warwick

Abstract

In writing about the development of written language in children aged 7 to 14, Andrew Wilkinson, a pioneer in this area, made the comment that “Development obviously takes place, but does not take place obviously” (Wilkinson et al, 1980, 2). Wilkinson here was alluding to a persistent problem in the research and pedagogic literature about writing development, that is the fact that, for all it is obvious that the writing of 14 year olds is likely to show developments from the writing of 11 year olds, which in turn will show developments from that of 7 year olds, the nature of these developments is only imprecisely known. The problem rests in a lack of common agreement about just what is meant by ‘development’ in writing. Several studies have indicated that the writing experiences of many pupils in British primary classrooms in the mid 1990s were ‘fragmentary and discontinuous’ (Webster, Beveridge & Reed, 1996, 147), and that there was little evidence of progression in teaching or an awareness by teachers of appropriate developmental expectations.

The aim of the current article is to disentangle the multiple strands of research and pedagogy in writing, in order to move towards a commonly agreed framework for measuring, and enhancing, development and progression in the mastery of writing among school-aged children.

Approaches to analysing writing development

A number of approaches to evaluating development and progression in writing have been put forward, each inspiring programmes of research, and each stemming from a quite distinct theoretical framework. For the purpose of this review, we have divided these approaches into three broad types, although there is some obvious overlap between these.

- Firstly, we examine research which has explored writing development from a linguistic viewpoint, looking for key markers in terms of children's developing use of grammar, vocabulary, punctuation, etc.
- Secondly, we explore research conducted from a functional linguistics perspective, which places greater emphasis upon writing as social discourse and, in particular, the development of coherence in writing.
- Thirdly, we focus on research which has linked the development of writing to the development of children's thinking – a cognitive approach.

1. Linguistic analysis

On the face of it, a way of looking at writing progression in terms of the growing command of linguistic features exhibited sounds an obvious starting point to descriptions of pupil progress. A lay person might well have linguistic expectations about writing development to the effect that more mature writers will tend to use longer and more complex sentences, more precise vocabulary and more complex punctuation, etc.

Such expectations undoubtedly originate in lay theories about the development of spoken language and it is often simply assumed that writing follows a similar pattern of development. As we shall see, the relationship between speech and writing is not as simple as this, and, linguistically, development in writing follows somewhat different patterns.

a) Grammatical development

The expectations we have just alluded to depend on an analysis of the linguistic structure of what is written – the structure of sentences and words, the organisation of paragraphs, the use of punctuation etc. All of these aspects are objects of consideration in what might be termed structural linguistics, and we examine what is known about their development in writing in this section.

There has been relatively little systematic exploration of the grammatical characteristics of children's writing. Three small-scale studies (Hunt, 1965; Loban, 1976; Harpin, 1976) did analyse children's writing for grammatical and syntactical structures and both Perera (1984; 1987) and Kress (1994) have

attempted to provide a linguistic description of stages in learning to write in younger writers. Dixon and Stratta (1980; 1982) also examined linguistic aspects of writing, but in this case the narrative production of post-16 year olds. More recent research (QCA, 1999; Myhill, 1999) has begun to explore linguistic developments in the secondary years and a recent important study by Myhill and Jones (2006) has added significantly to our knowledge in this area.

For primary-aged children, Kress (1982) argues that 'perhaps the major part of learning to write consists in the mastery of the linguistic unit of sentence, with all the manifold ramifications entailed in that' (71). The sentence is not a unit of spoken language: arguably we learn to speak in sentence-like structures only because we have transferred these features to our speech from our use of them in our writing. Young children are not in this position and, as a consequence, Kress argues, their early writing is characterized by the lack of the sentence as an organising structure. One of their tasks in learning to write is to establish for themselves what a sentence is about. Children need a long process of experimentation before they acquire an adult concept of the sentence. They have two major things to learn: how sentences are internally structured on the one hand, and how sentences link together as part of a larger text. These two are obviously related but we cannot simply assume that the learning and teaching of one (internal sentence structure) will inevitably lead to the learning of the other.

Harpin (1976) tried trace the development of the writing of 9-10 year old children over a period of two years and suggests distinctive patterns of syntactical development in children's writing, one of the most significant features of which appears to be the use of subordinate clauses. Harpin describes how the use of 'and' as a universal co-ordinator in the speech of young children is transferred to their writing in its early stages. He notes that, by the time children come to write, this is a powerful habit and gives way only slowly and reluctantly to the very large number of different joining methods provided for in English. He indicates the value of investigating the kinds of subordinate clauses used by children and of tracing their attempts to use less familiar kinds, such as relative clauses.

Perera (1984) also focused on the linguistic features in young children's writing. In examining the interrelationship between speech and writing, Perera refers to four phases: preparation, consolidation, differentiation and integration. In the preparation phase children are learning the basic mechanics of handwriting and spelling; in the consolidation phase they are able to express in writing what they can already convey in speech; they reach a differentiation phase when composing is becoming automatic and writing begins to diverge from speech, taking on its own distinctive functions, syntactic structures and patterns of organisation. By the integration phase children have such control of both oral and written language that they are able to make appropriate linguistic choices.

Assigning chronological ages to these phases is not easy, although Raban (1988) reports that, even at the age of 6 years, there are clear differences between the connectives used in children's writing compared with those used in their speech, especially when they have the opportunity to write at length. Perera (1984) suggests that the consolidation phase begins at about 6 or 7 years and that the differentiation phase begins at about 9 or 10 years. She points out that many studies have found that grammatical structures rarely found in speech begin to appear in children's writing in the 7-9 age range.

Allison *et al* (2002) have followed this up by investigating the use of subordinate clauses in the writing of 7 to 9 year old children. They found a wide variation between individual children in the subordinates they were able to use (or did use), which confirms the difficulty of assigning age expectations for this particular feature of writing. They also found a marked task influence on the use of subordinate clauses. This task effect suggests that even quite young children are sensitive to the demands of particular genres of writing, and that we should be wary of judging their competence in writing on the basis of their performance – it may be that the task calls forth only certain uses of language. Green *et al* (2003) examined inflectional and derivational morphological forms within narratives written by 3rd and 4th graders. Results indicate that children's control of morphological structures in their writing mirrors that in their speech: inflectional morphology is largely mastered by age 9 or 10, but derivational morphology continues to develop in middle childhood.

At secondary level, the most significant recent study is that of Myhill and Jones (2006) who present the results of an extremely detailed examination of the linguistic features in over 700 pieces of writing, personal narratives and persuasive arguments, produced by pupils of 12-13 years and 14-15 years old. Their main findings can be summarised as follows:

- Weak writing tended to have fewer words in the longest sentence than average and good writing.
- Good writing was less likely to have a confused longest sentence, that is, a sentence which was not structured in a grammatically correct way.
- Good writing had fewer finite verbs.
- Good writing had fewer finite subordinate clauses.
- Good writing had fewer coordinate clauses.
- Good writing was more likely to have present participle clauses.
- Good writing was less likely to open sentences with a subject.
- Average and good writing were more likely to have subject verb inversion than weak writing.
- Weak writing had shorter longest noun phrases than the average or good writing.

It should be noted, however, that there was also a large variation in grammatical usages between the types of texts produced. For example, personal narratives tended to contain fewer finite subordinate clauses than persuasive arguments. This finding confirms that of Allison et. al. (2002) that the nature of the writing task may be as important as writing ability in determining the linguistic features of particular pieces. It is difficult therefore to suggest with any confidence a particular developmental sequence in the use of grammar defined completely in linguistic terms.

b) Vocabulary development

There have been many studies of children's vocabulary development, focussed largely on very young children, and children with special attributes. Somewhat surprisingly, it has proved difficult to find research related to growth in writing vocabulary among normal, school-aged children. Lots of researchers have documented the importance of vocabulary development in the development of reading (e.g. Aarnoutse, C. & van Leeuwe, J., 1998). Yet the growth of vocabulary in writing seems hardly to have been studied.

What little information we have seems to suggest that morphologically complex words (e.g. words like *reusable*, in which there are 3 morphemes) do not appear in children's writing with any frequency until the beginning of secondary school (Berko-Gleason, J., 1993). The use of morphological forms of words in the writing of younger children can trail behind the forms they can speak or read by as many as 5 years. They are able to understand prefixes, suffixes, and inflection long before they are able to use them in their writing. This discrepancy seems to disappear by secondary school.

c) Spelling development

Early in the twentieth century, research into the learning of spelling was carried out on the basis of a phono-centric view of the English spelling system. The assumption was that English spelling was irregular and that learning to spell was best achieved through memorization. It was thought therefore that teaching should focus on the development of visual memory for the spelling of words (Cahen, Craun, & Johnson, 1969; Horn, 1960).

The work of Chomsky (1970) and Read (1971) prompted a reconceptualisation, however, and spelling began to be seen as a developmental process. Their work revealed that young children were capable of constructing knowledge about the relationships between sounds and letters without explicit instruction. Subsequent research mapped out and extended this developmental perspective (e.g., Ehri, 1993; Henderson & Beers, 1980; Seymour, 1992). A number of researchers focused on the investigation of young children's invented spellings (e.g., Ellis & Cataldo, 1990; Huxford, Terrell, & Bradley, 1992).

The fundamental insight that emerged from this research is that most children share a common developmental sequence of acquisition of spelling knowledge. Stage or phase models became a popular way of characterizing progression in this aspect of writing. Gentry (1982) described five stages: precommunicative, semiphonetic, phonetic, transitional, and correct.

- In the precommunicative stage, the child uses symbols from the alphabet but shows no knowledge of letter-sound correspondences.

- In the semiphonetic stage, the child begins to understand letter-sound correspondence but will often use an over-simplistic approach, using single letters, for example, to represent words, sounds, and syllables (e.g., U for you).
- Children at the phonetic stage use a letter or group of letters to represent every speech sound that they hear in a word. Examples are KOM for come and EN for in.
- During the transitional stage, the speller begins to use accepted spelling conventions rather than just representing sounds, moving from a dependence on phonology (sound) to the use of visual representation and an understanding of the structure of words. Some examples are EGUL for eagle and HIGHEKED for hiked.
- In the correct stage, the speller knows the English orthographic system and its basic rules. The correct speller understands how to deal with such things as prefixes and suffixes, silent consonants, alternative spellings, and irregular spellings.

Gentry notes that, while the change from one spelling stage to the next is a gradual one and that examples from more than one stage may coexist in a particular sample of writing, children do not fluctuate radically between stages.

From investigations of children's invented spellings (e.g., Ellis & Cataldo, 1990; Huxford, Terrell, & Bradley, 1992) have also come a number of other insights about spelling development. It seems, for example, that children acquire quite early (at least those brought up surrounded by Western scripts) the understanding that the spelling system represents sounds in a predominately left-to-right fashion. Children's invented spellings also eventually show the use of silent letters accompanying long vowels, which indicates that they are beginning to attend to the patterns of English spelling (e.g., TAEK for take and PLAYN for plane).

It should be noted that, with very few exceptions, research carried out within the now dominant developmental spelling paradigm has always focused on quite young children. The expectation of most researchers is that the majority of children will be working within the correct stage of spelling by the age of 8 or 9. Spelling ceases to be a mainstream research interest in children

older than 9 years or so, because it largely ceases to be a problem for these children. There will always, however, be exceptions.

d) Punctuation development

Another aspect of grammatical development in which progression might reasonably be expected is that of punctuation. This is currently a popular topic, having spawned, in 2003, a best-selling book (Truss, 2003), with the rather scary subtitle 'The Zero Tolerance Approach to Punctuation'. Yet this popular interest in punctuation is not reflected in research or writing about teaching and learning punctuation, or its development. Hall and Robinson (1996) bemoan the lack of research and writing about learning to punctuate but this book illustrates its own dilemma, being, as far as we can tell, the only significant publication about punctuation in school in the past ten years.

Hall and Robinson (1996) illuminate the long-standing debate about the function of punctuation in written texts, which centres around two views. According to the first, "The different points or stops in punctuation ... are conventional signs designed to show pauses and rests of various lengths in the manuscript." (Joad, 1939, p.59). Other writers have argued that punctuation largely serves a grammatical function and, according to Hall and Robinson (1996), it is upon the understanding of this that progression will centre. However, they also make clear that current statements about when it should be expected that children use certain punctuation marks (e.g. demarcating accurately a piece of prose using full stops and capital letters by the age of seven, *pace* the National Curriculum for English currently pertaining in England) are based on no research evidence at all.

Hall and Robinson review the slight existing (and flawed) evidence on progression in punctuation usage and conclude that there is some evidence that young children (up to 7 years old) move from a view of punctuation as a graphic feature towards seeing its linguistic and grammatical functions.

2. Social/functional analysis

In this section, we will examine approaches stemming from a rather different view of language structure, that of functional linguistics (Halliday, 1994).

While functional linguistics does try to account for the syntactic structure of language, it places the function of language as central (what language does, and how it does it). Functional linguistics begins by looking at social context, and examines how language both acts upon, and is constrained by, this social context. Because of this social lens, functional linguistics approaches will ask rather different questions about development in writing, for example, how do writers develop the ability to make meaning in writing, achieving coherence and cohesion in what they write, how do the demands of the task and their knowledge of a topic influence this achievement, and how do children develop sensitivity to audience and purpose in their writing?

a) Coherence

Coherence has been defined as “the overall unity of a text produced when topics are identified and contexts and cues are present to bind the discourse” (Spencer & Fitzgerald, 1993, p. 213) and it has been claimed that “meaning and coherence are not inscribed in a text, but are constructed by readers who are guided by textual cues and their own knowledge to bridge gaps and to fill in assumed information” (Bamberg, 1984, p. 307). Coherence, therefore, involves interaction between reader and writer (Brown & Yule, 1983; Cook, 1989; Givon, 1992). Ultimately, coherence is constructed in the mind of the reader, but the writer also has a vital role to play in helping the reader perceive a text as coherent, using such features as cohesive devices, discourse structure markers, and syntax to assist readers in the task of building a coherent mental model of a text.

Research on the development of the ability to produce coherent text has not been extensive. Galloway (2002), focusing on the production of persuasive texts by 9 to 15 year olds, did find evidence of developmental patterns. The general pattern of development was the increasing use of features to ensure coherence as pupils got older. Such features included:

- a text opening which clearly stated the writer’s position on the topic of the writing;
- the use of key words to develop reader focus on the topic of the text;
- the increasing use of synonyms to avoid over-repetition of key words in the text;

- clear organisation of the content of the text, in this case the arguments presented in support of a proposition.

b) Cohesion

Cohesion is generally understood as text connectedness at the sentence level (Bamberg, 1983), and is sometimes referred to as 'local coherence' (e.g., Van Dijk, 1977). Cohesive links are overt links between different parts of a text (Enkvist, 1990), provided by writers to guide readers as to the relationships between different sections of a text, with the aim of helping them to make meaning from it (Bublitz, 1989; Gumperz, Kaltman, & O'Connor, 1984).

Probably the best known study of cohesive devices is Halliday and Hasan's (1976) seminal work. They identified four main types of cohesive links: reference, lexical, conjunction, substitution and ellipsis. A brief description of each of these links will now be given, together with a discussion of what is known about the development of their use in young writers.

(i) Reference - semantic relations achieved through use of words, usually pronouns, to refer to objects or ideas mentioned elsewhere in a text.
John lifted his bag. *It* seemed very heavy.

The findings from several comparative studies of narrative and non-narrative writing, (e.g., Allard & Ulatowska, 1991; Crowhurst, 1987; McCutchen & Perfetti, 1982; Pellegrini, Galda, & Rubin, 1984), show that in narrative writing, reference management is substantially mastered by 10-11 years of age.

The pattern for mastery of reference management in non-narrative writing is less clear. In the studies cited above, especially Crowhurst (1987), it is clear that mastery does not occur until well into secondary school years, but that factors such as text type and familiarity of topic have a strong influence on performance (DeWeck & Schneuwly, 1994).

In summary, reference management is mastered gradually over a period of some years, with mastery occurring earlier in narrative than non-narrative text types. Reference management is substantially mastered by mid-late

primary school age, but development continues well into secondary years, and is linked to knowledge and mastery of specific discourse structures.

(ii) Lexical - relations achieved through vocabulary selection, usually by synonyms or word repetition.

I like cats. They are such lovable *animals*.

We live in a house. *It's* a really nice *house*.

The majority of studies involving children of middle primary and secondary school age indicate little or no significant change with age in the proportion of lexical cohesive ties used in either narrative or non-narrative texts (e.g., Cox, Shanahan, & Tinzmann, 1991; Crowhurst, 1987; McCutchen & Perfetti, 1982; Pellegrini, Galda, & Rubin, 1984; Yde & Spoelders, 1985, 1990).

Crowhurst (1987), however, reports differences between middle primary and secondary children in the use of the different types of lexical cohesion (repetition and synonyms), in both narrative and non-narrative writing. The proportion of synonyms employed increased across all age groups, in both narrative and non-narrative texts, reflecting general vocabulary growth. However, the pattern of development for repetition was different for each text type. In narrative writing, repetition decreased, probably as a consequence of general growth in vocabulary. In non-narrative writing on the other hand, Crowhurst (1987) found that repetition initially decreased significantly from 12 to 16 years, but then increased significantly up to 18 years. After qualitative analysis of the data, she concluded that, in 12 year old texts, repetition was a sign of immaturity in written language. By 18, although students were using a similar proportion of repetition to 12 year olds, they were now using it strategically to develop their arguments and repeated words and phrases as they elaborated and summarised their ideas.

In summary, the majority of studies point to the proportion of different types of lexical cohesion remaining stable or increasing across the school years. Within that overall pattern there are changes in the types of lexical cohesion used in different types of texts and at different ages, with greater diversity of types at higher levels.

(iii) Conjunction - relations achieved through the use of connectors to show the relationships between statements.

She was smiling, *but* she did not seem happy.

When you have finished, we shall leave.

There are two main aspects to the development of conjunctive cohesion in children's written language, and each shows a different pattern of change with age. One aspect is changes with age in the proportion of conjunctive ties used; the other is changes in the variety of conjunctive ties used.

The proportion of conjunctive ties used in written language is fairly stable from around late primary/early secondary age, with changes thereafter being qualitative rather than quantitative, although development in conjunctive use continues into secondary years and possibly even beyond (Crowhurst, 1987; McClure & Geva, 1983; Pellegrini, Galda, & Rubin, 1984). The majority of studies of conjunctive use by primary age students are based on narrative texts, while those involving secondary students are predominantly non-narrative-based.

The variety of conjunctive ties used changes with age. In primary school level texts, the most common conjunctions are those used in speech, for example, *and*, *but*, *so*, *then*, *just* and *after that* (O'Brien, 1992; Perera, 1984; Yde & Spoelders, 1985). The decrease in conjunctive use across the primary school years is attributable to the increasing use of more complex syntax (e.g., use of non-finite clauses) and different ways of structuring discourse, which means less reliance on conjunctive cohesion (Yde & Spoelders, 1985, 1990).

In summary, a survey of studies of the development of conjunctive cohesion in children's written language indicates a similar trend in both narrative and non-narrative of initial increase in proportion of conjunctive cohesion used, followed by 'plateauing' as other types of syntactic and structural means of discourse connection start to become evident. The growth plateau appears to occur earlier in narrative than non-narrative texts, by perhaps two to four years.

(iv) Substitution - relations achieved by using one word or phrase in place of another.

I bought a new car today. There were *several* I could have had.

Ellipsis - relations established by deleting words or phrases.

Who brought the parcel? The postman (*brought it*).

Inter-sentence ellipsis and substitution have been found to occur infrequently in the written language of both adults and children and may not really appear at all until around the third year of schooling (Rentel and King, 1983). Zarnowski (1983) and O'Brien (1992) report some use of both ellipsis and substitution by 9 to 14 year olds in narrative writing, although the proportions were extremely small. O'Brien, though, does note growth in the ability to employ ellipsis in a wider variety of contexts. He found that whereas 9 year olds ellipted only a subject or an object, by 12 children were readily able to ellipt larger blocks of text. Only two studies of non-narrative writing report on the use of ellipsis and substitution (Crowhurst, 1987; Neuner, 1987), but the findings are very similar to those for narrative - an extremely small percentage of texts used either ellipsis or substitution, even, in the case of Neuner's study, at college level.

In summary, the proportions of both ellipsis and substitution employed in both narrative and non-narrative texts are small, and there is little change with age in the proportions of these cohesive devices used.

The general pattern of development of the use of cohesive devices is thus similar for both narrative and non-narrative, though mastery tends to occur later in non-narrative texts than it does in narrative. For example, referential cohesion is substantially mastered in narrative writing by around 9-10 years of age, but not until at least 12 years of age in non-narrative.

c) *Writing genres*

Functional linguistics has also been responsible for a new way of looking at the types of texts children are expected to produce in their writing and a broadening of this range may well be a growth point in children's writing competence. Of course, the idea that children should be encouraged to write for particular purposes, for a range of audiences and in a range of forms is not new. However, what might constitute such a range was often described in very general terms such as the listing of different types of texts, for

example, 'notes, letters, instructions, stories and poems in order to plan, inform, explain, entertain and express attitudes or emotions' (Department of Education and Science, 1990). Such a listing of text types implies that teachers and students knew what distinguished the form of one text type from another. At a certain level, of course, this is true - we all know what a story is like and how it differs from a recipe, etc. Most of us are aware that a narrative usually has a beginning, a series of events and an ending and many teachers discuss such ideas with their pupils. It is still relatively rare, however, for teachers to deal with other forms of texts, particularly non-fiction texts, in such a way - drawing on their knowledge of the usual structure of a particular text type to improve children's writing of that form.

It has been argued (e.g. by Martin, 1985) that our implicit knowledge of text types and their forms is quite extensive and that one of the teacher's roles is to make this implicit knowledge explicit. Theorists in this area are often loosely referred to as 'genre theorists' and they base their work on a functional approach to language arguing that we develop language to satisfy our needs in society (Halliday, 1985). They see all texts, written and spoken, as being 'produced in a response to, and out of, particular social situations and their specific structures' (Kress & Knapp, 1992, p.5) and as a result put stress on the social and cultural factors that form a text as well as on its linguistic features. They see a text as a social object and the making of a text as a social process. They argue that in any society there are certain types of text - both written and spoken - of a particular form because there are similar social encounters, situations and events which recur constantly within that society. As these events are repeated over and over again certain types of text are created over and over again. These texts become recognised in a society by its members, and once recognised they become conventionalised, i.e. become distinct genres. Kress defines a genre as 'a kind of text that derives its form from the structure of a (frequently repeated) social occasion, with its characteristic participants and their purposes' (Kress, 1988, 183)

Different theorists have categorised the types of written genres commonly used in the classroom in different ways. In England the National Literacy Strategy (DfEE, 1998) uses the categories of non-fiction genres originally identified by Martin and Rothery (1980) and expanded and developed by Wray and Lewis (1995; 1997). The six main types of non-fiction genre

identified were recount, report, procedure, explanation, persuasion and discussion. Each of these genres has its own distinctive text structure and language features. Martin and Rothery (1980) found that, of these six genres, recount was overwhelmingly the most widely experienced by children in school. Because this dovetails with the salience of narrative as the dominant form of writing among younger children, it may be that a mark of writing progression would be the gradually increasing command over a widening range of text genres. This is the principle which underpinned the National Literacy Strategy Framework of Teaching Objectives (DfEE, 1998), although it must be admitted that this principle is theoretically rather than empirically derived.

d) Audience and purpose

Both the nature of the audience for a piece of writing and the purpose for writing have an influence on writing performance. Writers need to determine such matters as who the audience is, how they should be addressed, and what knowledge they may have and what they may need to know. Although initially children write as they speak, assuming that the audience is present and will ask if more information is needed (Yde & Spoelders, 1990), as children get older they become more able to recognise reader needs in writing and adjust to them (Rubin & Piche, 1979).

“Audience awareness is a critical component of transactional writing” (Frank, 1992, p. 278). Frank’s study of 10-11 year old students’ ability to adapt their writing to different audiences suggested that that ability starts to be shown at about this age. On the other hand, Crowhurst and Piche (1979), from their study of the influence of different audiences (familiar/more distant) and different types of texts on the writing performance of 12 and 16 year old students, report no significant differentiation by audience in the younger students’ writing, although in the 16 year olds there was significant audience differentiation.

In a research context, whether or not participants are communicating with a real audience, or an imagined one, may make a difference to performance. In normal day-to-day life, communication has a genuine purpose, but this is not always the case in a research (or a classroom) context. Frank (1992)

comments on this problem, saying that in a research context it is difficult to create a truly authentic writing task, but that it is possible, and important, to create a realistic one. The validity and importance of these comments about authentic and purposeful tasks is borne out by several pieces of research. Both McCutchen (1987) and Golden and Vukelich (1989), for example, confirmed the value of establishing realistic purposes for the writing tasks they elicited from the children in their studies to increase motivation for the task, and to give a purpose for writing. Raban (1988) also reports that her participants wrote better pieces when the purpose for writing was genuine and the audience varied.

3. Writing from a cognitive development perspective

A third paradigm within which the development of writing has been studied and theorised is that of cognitive development. The ways children can use the written language systems to convey meaning must, it is argued, be connected in some way with the development of their ways of thinking about the world, and many researchers have explored these connections, producing in the course of this exploration some highly influential models of writing development.

a) Early writing experiences

It seems likely that children control first order symbol systems like drawing before they control second order symbols like writing (Vygotsky, 1962). Young children coming to school bring a wide-ranging linguistic competence (Wells, 1981, Brown, 1968) which may be the basis of learning to write, but it is unlikely that oral skills transfer directly into writing. There are critical differences between speaking and writing. Kress (1982) observes that whereas in speech the child creates a text in interaction with another, in writing the child must create a text without the “guide, the prodding, the stimulus of the interaction” (1982: 35).

The observed early behaviour of young children seems to reflect the complex and hierarchical nature of the writing system (Clay, 1975; Hiebert, 1981), for they seem naturally to explore all aspects of the writing system. Writing may start as “undifferentiated squiggles” to which children assign meaning

(Vygotsky, 1962). In addition to finding personally meaningful connections they explore the medium without obvious concern for a particular message. Clay (1975) reports young children exploring the graphic elements of the system through play, in ways which are specific to the language of their society (Ferreiro, 1978). Children also repeat particular sentences or phrases and may write whole texts (Sulzby, 1985) which may be written in scribble writing which imitates cursive handwriting. Early efforts to write for specific audiences may result in more conventional words than writing for less specific audiences (Lamme & Childers, 1983).

Once children have gained some initial understanding of the symbol system, and particularly its alphabetic nature, and the permanence of written text, then writing may become more difficult as children are less willing to put down random letters and work hard to orchestrate the complex encoding and message creation process of writing (Clay, 1975). In doing so they must use other people, other symbol systems and their understanding of the activity they are participating in.

A child's developing knowledge and experience of reading may have a role in writing development (Rosen & Rosen, 1973). Clay suggests there are physical reasons why writing must follow the introduction of reading: having to co-ordinate hand, eye and mind forces a careful analysis which brings detail into focus in a way in which rapid reading cannot. Wells (1981) considers however that waiting for children to become fluent readers before involving them in composing texts is to miss many opportunities for them to explore and understand the power and use of text. A number of authors address the particular significance of children's own names in their early writing (Haney, 2002).

The role of children's early understandings about writing is also disputed. Beard says that for many young children "the abstract nature of written language is a source of doubt and uncertainty. The nature and importance of reading and writing activities are not clear to them." (1984: 59) This uncertainty, particularly in the field of reading, has been investigated by a number of researchers (Reid, 1966; see Johns, 1986 for a review of this area) and was termed "cognitive confusion" by Downing (1970) who claimed that young children did not have the necessary functional and featural concepts to

enable them effectively to learn reading and writing skills. Harste, Woodward and Burke (1984), however, write that “after many years of work in this area....we have yet to find a child who is cognitively confused” (56) and other theorists take similar positions (Ferreiro & Teberosky, 1983). Hall (1987) ascribes a large part of the findings to the methods of research of those who describe cognitive confusion. He acknowledges that young children do not have the same understandings about writing as adults and suggests that a more appropriate question may be whether the concepts about literacy of young children are confused simply because they are different from those of adults. Clay (1975) suggests children are creating and changing their theories about print and that if these theories are seen through child like eyes, they are not confused, but simply immature.

Form in adult writing is closely related to purpose: we choose the form which best meets our purposes in constructing a piece of writing to communicate meaning. Initially in their explorations young children will use both drawing and writing as symbolic systems to represent their experiences (Dyson, 1982). This may be related to the high incidence of narrative writing in young children. It has been suggested that narrative writing has a particular function in the development of writing. “Narrative writing may ... have a specially important place in the learning of writing, in that it permits the child to develop textual structures and devices in writing by drawing on the child’s already established abilities in spoken language.” (Kress, 1982: 59). If this is so there must be a course of development which enables children to develop a range of forms and purposes beyond narrative.

b) Lengthening discourses

Writing is the process of making not just whole words, phrases or clauses, but whole discourses. There is evidence that very young children do compose whole discourses early in their development as writers (Harste et al, 1984; Newman, 1984). As writing ability grows, one would expect to see increasing length and complexity in the texts written, and an approach to this has been to record the amount of writing done in response to tasks at a particular age. Mykelbust (1973) found that when children of ages seven to seventeen were set a story writing task, there were consistent increases in story lengths with age for both genders up to age thirteen. However, a study

by Richardson et al. (1975) of 521 eleven year old children produced some interesting results. The children were all asked to write about their lives and interests. They produced texts of varying length, and though the lengths of their pieces generally correlated with their scores on ability scales, they did not correlate with measures of syntactic maturity. Gundlach (1981) concludes that this indicates that length and complexity of a composition are related to more than the syntactic ability, age and skill of the writer; the writer's aims, sense of what is required, and personal reactions are also crucial.

c) *Broadening range*

This raises the question of whether the relationship between the text and the writer's aims, sense of what is required, and personal reactions, changes as a writer matures. Both Moffett (1968) and Britton (1970; Britton et al, 1975), using different classifications of writing types, have suggested that in developing as a writer the child becomes increasingly more able to write for a variety of increasingly elaborate purposes, more remote audiences and in more appropriate forms. Moffett expresses this as levels of abstraction: recording; reporting; generalising; theorising. Moffett applies this concept of levels of abstraction both to mental activity and to the structuring of discourse and bases it upon decentering. "Differentiation among modes of discourse, registers of speech, kinds of audiences is essentially a matter of seeing alternatives, of standing in others' shoes, of knowing that one has audiences" (Moffett, 1968: 57). Although Moffett does not attempt to provide evidence for this hypothesis, it has been adopted as a rationale by some writers (Harris and Kay, 1981) and used by Britton to examine the writing of adolescents, with inconclusive results.

Young writers demonstrate recognition that a composition should have a coherent structure and that even pre-school children are aware of differences in text structures or genres (Newkirk, 1987), even though their initial writing may be simply labelling or statements (Dyson, 1983; 1988). A number of researchers have traced the development of complexity in texts and conclude that by the time they come to school children display understanding of some of the features of narrative (Applebee, 1978; Leonard, 1977; Wolf, 1985). Research in this area has used studies of spoken narrative

(Labov, 1973; Kernan, 1977) and children's comprehension of stories (Fredriksen, 1979) to investigate how children's written stories develop in complexity in the early years at school (King and Rentel, 1981; 1982). Rumelhart (1975) proposed the notion of story grammars and this idea of a story script or schema was also considered by Stein and Glenn (1979). They suggested that children use their experience of hearing stories to create a schema which they apply when writing. Wilkinson (1986) points out that these theorists did not fully explain how the schema might help structure narrative logically. However, taken with the work of Labov (1977) these ideas can be used to generate a set of narrative structures which may be used in writing: beginnings, settings, episodic structure, chronology and endings. The way children are able to use and arrange these elements develops with age. The chronology becomes more complex, and the core narrative becomes more described and explained. As competence develops, so the writing is characterised by more description (Wilkinson, 1980). The characterisation in children's stories develops (Fox, 1986) and towards the end of primary school information about the characters motivation and reactions is often included (Bartlett, 1981).

Less information exists about the development of expository prose. Young children use exposition (Bissex, 1980; Langer, 1986; Taylor, 1983). Newkirk (1987) has described the development of exposition in the early years and Langer (1986) has extended this to the writing of older children. These descriptions offer ideas about how children's expository writing may be transformed from structures they already know. It is suggested that rather than using wholly new structures, children solve new text creation problems by adapting forms they already control. More research has been carried out into the ways in which secondary school children learn to use non-fiction writing (Bereiter, 1980; Scardamalia, 1981). Bereiter and Scardamalia suggest that students' difficulties with these forms has to do with the constraints of cognitive development. Students need to integrate their ideas into a coherent whole. It seems likely that the development of writing forms must be related to personal and cognitive development and a number of theorists have described possible pathways of such development.

d) *Organisation and orchestration*

Bereiter describes five stages of writing which form an “applied cognitive developmental framework” (1980: 73): *associative* (relating words to symbols); *performative* (increased conformity to convention); *communicative* (increasing reader awareness); *unified* (increasing self evaluation); and *epistemic* (thinking through writing). Each stage represents a discrete form of cognitive organisation, involving readjustment of the process used, rather than adding new skills to an existing process.

This model allows for a conscious focus on differing elements of writing. *Associative* and *epistemic* writing are focused on the process of writing, whilst *performative* and *unified* focus on the product and *communicative* on the reader. Bereiter suggests that school writing instruction involving correction by the teacher and writing exercises is devoted to moving students from associative to performing aspects of writing and says “if writing was only what schools make it ... it is doubtful anyone would get through the first two stages”. Bereiter notes that a degree of mastery of stylistic convention frees attention for consideration of the ways in which writing can affect the reader and this in turn allows the writer to read critically their own writing. This, Bereiter suggests, activates the “feedback loop” on which unified writing is based and leads to the discovery of writing to learn as a dialogue with oneself.

As the linguistic, cognitive, and moral dimensions of composing develop children face the problem of orchestrating complex writing processes. Children cannot control all aspects of the written system at once (Graves, 1983; Jacobs, 1985; Weaver, 1982). Flower and Hayes (1980) offer considerable evidence that good writers must be able to plan and the development of planning abilities has been researched by Burtis, Bereiter, Scardamalia and Tetroe (1983). They suggest that, in the course of writing development, planning becomes gradually differentiated from text production. In the early years a child’s mental activity will be so closely linked to text production that it is difficult to identify separate thinking which can be called planning. As the writer develops, the problem of finding content for a composition becomes separated from the problem of writing the composition. At this point there is evidence of planning, but it is still closely

tied to the text and generally consists of listing possibilities for content. In adolescence, planning becomes more elaborated and contains elements which have only indirect bearing on the text. Burtis et al (1983) consider the emergence of plans as an object of contemplation as a major advance in development.

Flower and Hayes (1980) used think aloud protocols to identify three kinds of planning in mature writers: generating (retrieving relevant information), organizing and goal setting. They collected think aloud protocols from five students of each age: 10, 12, 16 and 18. The results showed content generation statements predominated at all ages but by 18 other types of planning had become significant. The protocols of the 18 year olds resembled those of expert writers, but the protocols of younger children suggest they were primarily thinking of content and writing it down.

Berninger and her colleagues modified an earlier model of the writing processes of adult writers developed by Hayes and Flower (1980). The resulting explanatory model of compositional processes in developing writers includes three phases: planning, translating, and reviewing (Berninger et al., 1995: 294). During the planning phase, ideas are generated and organized, and writing goals are set. The translating phase has two portions: text generation and transcription. During the text generation portion, ideas are turned into mental language. After the mental language has been generated, it is then transcribed into written language. During the review phase, ideas, mental language, and written language are evaluated and revised (Hayes & Flower, 1980). It is important to note that these phases are not linear but can interrupt each other and can take place within each other. For example, for a writer who writes down her plans, the translating phase takes place during the planning phase. Also, a writer who considers and then rejects various topics is revising during the planning phase.

e) *Working memory constraints*

In the past decade, significant effort has been devoted to understanding the role of working memory in writing. The idea of working memory is used to describe the temporary storage of information necessary for carrying out tasks (such as multiplying numbers without the help of pencil and paper).

Unlike long-term memory, which can store virtually unlimited amounts of material for many years, working memory is limited in the amount of material it can hold (a few items) and in the length of time it can hold it (a few seconds).

Kellogg (1996) and Hayes (1996) have both given a central role to working memory in their very influential models of the writing process. Understanding the ways different writing processes draw on the same limited working-memory resources could explain why some writing processes are more difficult than others and how these processes may interfere with each other. Kellogg and Hayes both proposed that working memory be included as a central component in models of writing. Both models build on the description of working memory provided by Baddeley and colleagues (e.g., Baddeley & Hitch, 1974; Gathercole & Baddeley, 1993): the two models differ in how the various writing processes use working memory. Hayes & Chenoweth's (2006) findings suggest that working memory is involved in the formation of long-term memories, that is, in learning.

Identifying the role of working memory in the various writing processes may help us to understand interference among memory processes that contend for the same scarce memory resources and this may cast light on writing development. For example, young writers may have to devote large amounts of working memory to the control of lower-level processes, such as handwriting or typing, and thus have little left for higher-level processes. Indeed, the development of skill in writing may require the automatization of lower-level skills so that they use less of the available working-memory resources. The findings of Gathercole, et al (2004) suggest working memory to be particularly associated with the literacy scores of younger children. For example, a child who devotes too much working memory to avoiding surface errors may have too little to devote to planning. Children with smaller working-memory capacities may require different writing strategies and different teaching methods than those with larger capacities.

f) Revision

Research has shown that expert writers devote considerable time and attention to revising their work (Bereiter & Scardamalia, 1987; Collins &

Gentner, 1980; Fitzgerald, 1987; Flower & Hayes, 1980). In contrast, several studies have shown that school children generally do not revise frequently or skilfully in the classroom (Bereiter & Scardamalia, 1987; Englert, Hiebert, & Stewart, 1988; Fitzgerald, 1987), although the ability to revise seems to improve with age (Cameron et al, 1997). In addition, when children are encouraged or required to revise, their changes do not always improve the communicative quality of the text (Bereiter & Scardamalia, 1987). Although increased emphasis has recently been placed on the revision process in the primary school classroom, children generally do not receive instruction in specific strategies for assessing the comprehensibility of their work (Graves, 1983).

Many studies have shown that children generally overestimate the communicative quality of prepared texts and believe that they and others understand messages that adults consider incomprehensible (cf. Olson & Hildyard, 1983). It may be that children revise infrequently because they tend to assume that the text is clear and that the reader will understand their intended meaning.

g) Task Demands

The effect of the mechanics of writing on language production is an important issue in research into children's written language. When children are just starting to master writing skills the cognitive demands of coping with a new medium (e.g., forming letters, attending to spelling and punctuation etc.), as well as with text and context demands, may impede their linguistic performance. However, it has been found that once the physical processes become relatively automatised, which generally occurs by the third or fourth year of formal schooling if not earlier, the written medium is not a major hindrance to linguistic production (Donaldson, 1996; Hidi & Hildyard, 1983; Villaume, 1988), especially if children are assured that the focus is the text itself, not their technical accuracy (Cameron, et al, 1988).

However, recent work has emphasised that for many younger writers, the transcription phase places important constrictions on the writing process (Berninger, 1999; Graham, Berninger, Abbott, Abbott, & Whitaker, 1997). When handwriting and spelling are not automatic, they use up critical processing resources in the working memory of the young writer, which

limits the resources remaining for idea and text generation (Berninger, 1999). Indeed, handwriting fluency continues to have an effect on text production into secondary education and in adults. (Bourdin, 1999). Kellogg (1996) argued that for children beginning to write the physical demands of the task are so significant that other cognitive processes will be suppressed whilst it is occurring. He stressed that it is only when automaticity with handwriting is achieved that mental capacity can be freed up for dealing with other aspects of the writing process, such as compositional demands. This contrasts sharply with the position of those researchers who argue for a reduced emphasis on presentation, advocating that children should be encouraged to focus on the compositional aspects of writing from the outset (Graves, 1983; Teale & Sulzby, 1986). The finding supports other research suggesting that the development of handwriting fluency appears to be significantly related to the development of compositional skill and fluency for children in the early stages of learning to write (Berninger et al., 1992; Graham, Harris, & Fink, 2000; Swanson & Berninger, 1994; Medwell, Strand & Wray, 2007).

While the mechanical demands of the writing process generally cease to be a major problem for children from about 7 or 8 years of age onwards, the type of text that they are required to write continues to have an impact on their performance (Boscolo, 1996; De Week & Schneuwly, 1994; Erftmeier & Dyson, 1986; Prater & Padia, 1983). Younger primary school children's experience tends to be dominated by narrative forms, or by expository forms that include narrative elements (Cox, Shanahan, & Tinzmann, 1991; Wray & Lewis, 1995). Children generally do not find great difficulty in producing written narratives, possibly because their primary linguistic experiences have been with oral narratives (De Week & Schneuwly, 1994; Hidi & Hildyard, 1983; Yde & Spoelders, 1985). However, the same degree of familiarity is not necessarily present for non-narrative genres. This may mean that the cognitive demands of producing non-narrative texts may be greater than for narrative, and it is this, rather than the use of the written mode per se, which may make some types of written text production difficult (Donaldson, 1996; Hidi & Hildyard, 1983).

A range of studies has found that writing non-narrative genre texts is more demanding than writing narrative, and that within the non-narrative category, argument or persuasive genre is the most cognitively demanding (see, for

example, Crowhurst, 1990, 1991; Crowhurst & Piche, 1979; McCann, 1989; Prater & Padia, 1983). One reason for this, Erftmeier and Dyson (1986) suggest, is that children “may have few, if any mental models of written persuasion” (p. 108). Similar comments have been made by Cox, Shanahan, and Sulzby (1990), who suggest that children’s problems with expository texts stem from lack of familiarity with the genre, not from the “levels of abstract intelligence required or to the inappropriateness of the genre for children” (p. 53). This idea receives support from research by Newkirk (1987), which shows that even children as young as five or six years of age are able to write non-narrative texts, including persuasive texts, given the right context and motivation.

Dimensions of writing development

On the basis of the research discussed above it is possible to give a summary of the dimensions of writing, together with a brief description of what progression in each of these dimensions appears to look like.

Spelling

Spelling development does appear to follow a reasonably consistent path, through a number of stages. In the *precommunicative* stage, the child uses symbols from the alphabet but shows no knowledge of letter-sound correspondences. The child may also lack knowledge of the entire alphabet, the distinction between upper- and lower-case letters, and the left-to-right direction of English orthography. In the *semiphonetic* stage, the child begins to understand letter-sound correspondence - that letters represent sounds. At this stage, the child will often use a logical but over-simplistic approach, using single letters, for example, to represent words, sounds, and syllables. Children at the *phonetic* stage use a letter or group of letters to represent every speech sound that they hear in a word. Although some of their choices do not conform to conventional English spelling, they are systematic and easily understood. During the *transitional* stage, the speller begins to use accepted spelling conventions rather than just representing sounds, moving from a dependence on phonology (sound) to the use of visual representation and an understanding of the structure of words. In the *correct* stage, the speller knows the English orthographic system and its basic rules. The

correct speller fundamentally understands how to deal with such things as prefixes and suffixes, silent consonants, alternative spellings, and irregular spellings.

Handwriting

Recent work has emphasised that for many younger writers, the transcription phase places important constrictions on the writing process. When handwriting and spelling are not automatic, they use up critical processing resources in the working memory of the young writer, which limits the resources remaining for idea and text generation. Indeed, handwriting fluency continues to have an effect on text production into secondary education and in adults. We cannot assume, therefore, that handwriting ceases to be an issue in the development of writing past the early primary years.

Length

It has been found that weaker writing tends to include shorter sentences, and shorter noun phrases, than average and good writing. It has been suggested, however, that the length and complexity of a composition may be related to more than the syntactic ability, age and skill of the writer; the writer's aims, sense of what is required, and personal reactions are also crucial.

Grammar and Punctuation

There do seem to be some important grammatical differences in children's writing as they mature. There tends, for example, to be less incidence of confused grammatical structure in older children's writing, fewer finite verbs, fewer finite subordinate clauses and fewer coordinate clauses. Good writers tend to show greater use of subordination in their sentence structure and greater use of more complex structures such as present participle clauses and non-finite subordinate clauses, particularly in opening sentences. It also seems that the use of subject verb inversion is an indicator of development in writers.

In terms of punctuation, there is some (flawed) evidence that young children (up to 7 years old) move from a view of punctuation as a graphic feature towards seeing its linguistic and grammatical functions. But we lack evidence about progression in punctuation usage beyond the age of 7 years.

Vocabulary

Many studies have been undertaken to determine the nature and extent of young children's vocabulary development and these demonstrate the truly prodigious linguistic accomplishments that children attain by the time they reach school age. While estimates vary, by age six most children have active vocabularies numbering in the several thousands of words.

There is, however, an important difference between knowing words and understanding their broad range of uses and referents, for vocabulary development is first and foremost a matter of concept development. For this reason considerable attention has been turned in recent years to children's semantic development; that is, to the development of word meaning (Anglin 1970, Foss and Hakes 1978). These studies illustrate that how words are used, not their length or frequency of use, indicates children's lexical maturity and, commonly, their intellectual maturity as well (Straw 1981).

Content

Bereiter's model of successive forms of organisation in writing is a useful index of development in terms of the shaping of content. He describes five stages of writing: associative (relating words to symbols); performative (increased conformity to convention); communicative (increasing reader awareness); unified (increasing self evaluation); and epistemic (thinking through writing). Each stage represents a discrete form of cognitive organisation, involving readjustment of the process used, rather than adding new skills to an existing process. Overall, the production of content in writing develops from knowledge-telling to knowledge transformation and the epistemic stage is reached.

Structure

Research on the development of the ability to produce coherent text has not been extensive but there is evidence that the general pattern of development includes the increasing use of features to ensure coherence as pupils got older. Such features include: clear text openings to orientate the reader, the use of key words to develop reader focus, the use of synonyms to avoid over-repetition of key words in the text and clear organisation of the content of the text.

The use of cohesive devices also develops and this development is similar for both narrative and non-narrative texts, though mastery tends to occur later in non-narrative texts, in more complex types of texts and more demanding tasks.

In terms of text types, recount seems overwhelmingly to be that most widely experienced by children in primary school. A mark of writing progression is the gradually increasing command over a widening range of text genres.

Characters

As they get older, children's abilities to portray characterisation in stories seems to develop and towards the end of primary school information about characters' motivation and reactions is often included (Fox, 1986).

Style

Children's early writing style is characterised by simple, literal, affirmative sentences and this does not show many signs of development until the secondary years when such features as structure, cohesion, verbal competence and reader awareness develop.

Audience awareness

Although initially children write as they speak, assuming that the audience is present and will ask if more information is needed, as children get older they become more able to recognise reader needs in writing and adjust to them.

Little significant differentiation by audience is found in the writing of younger children, although by the age of 16 significant audience differentiation seems to be apparent.

Writing processes

In the course of writing development, planning becomes gradually differentiated from text production. In the early years a child's mental activity will be so closely linked to text production that it is difficult to identify separate thinking which can be called planning. As the writer develops, the problem of finding content for a composition becomes separated from the problem of writing the composition. At this point there is evidence of planning, but it is still closely tied to the text and generally consists of listing possibilities for content. In adolescence, planning becomes more elaborated and contains elements which have only indirect bearing on the text.

Research has also shown that expert writers devote considerable time and attention to revising their work but that school children generally do not revise frequently or skilfully in the classroom, although the ability to revise seems to improve with age. Children seem to revise infrequently because they tend to assume that the text is clear and that the reader will understand their intended meaning.

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