The Social Context of Language and Literacy Development

Gordon Wells
University of California, Santa Cruz

As educators, we have long paid attention to the social context in which children learn and develop. But, to many, the phrase "social context" may suggest no more than the societal setting in which events occur – in this case, the various surroundings at home, at school, and in the community in which children learn to talk, read and write. In recent years, however, a much more radical understanding of the importance of the social context of development has emerged as the result of a convergence of theoretical and empirical research in a variety of disciplines. According to this new understanding of social context, human infants are not only influenced by the social context in which they develop, but their very development as humans is dependent on opportunities to participate with others, notably parents, family members, peers and teachers, in the activities that constitute the culture in which they are growing up. Children's development is thus as much a social as an individual achievement. In this chapter, therefore, I will attempt to explain current thinking about the relationship between individual development and societal and interpersonal practices and then explore the implications of this new understanding for how best to assist children in their learning of language and literacy.

This revolution in thinking about human development just mentioned has many and varied roots, ranging from a mounting dissatisfaction with the limited explanatory power of behaviorists' stimulus-response, association theory of learning to neuropsychologists' rapid advances in understanding the functioning of the human brain, and from Piaget's work on cognitive development to anthropological studies of less technologically developed cultures. The question that is at the heart of all these very different lines of research is: How does every human infant, no matter where they are born, become, in a few short years, a socially competent member of the particular community in which she or he grows up?

While much of what is now known about human development is the result of observational and experimental studies of ontogeny (the development of individuals over their life course), the recognition that each individual's development is afforded and constrained by the time and place in which they grow up has led a number of researchers to look beyond ontogenetic development in contemporary societies to ask questions about the historical development of those societies and also about the development of the human species as a whole from the point when it evolved from the line that connects humans to other higher primates.

The Phylogenetic Trajectory of Human Development

The title of a recent book, *The Third Chimpanzee* (Diamond 1992) draws attention to the very great genetic similarity between modern humans and chimpanzees. Yet it is only humans that have developed "the cognitive skills necessary for modern humans to invent and maintain complex tool-use industries and technologies" (Tomasello, 1999, p. 2). What are the crucial differences between chimpanzee and human neonates that enable the latter but not the former to develop these necessary cognitive skills? From archeological and other evidence, it is clear that there have been many changes, both in physique and in mental power, since the emergence of our proto-human ancestors several million years ago. It seems possible, therefore, that the study of these changes and the conditions under which they occurred in the development of our species may help us to understand what has led to our current state.

Taking this tack, Donald (1991) studied many forms of evidence in an attempt to trace the "origins of the modern mind" and, on this basis, argued that, over the last four million years, there have been three critical developments in cognitive functioning, each driven by the need to share intentions and information, and each made possible by the "invention" of a new and more powerful system of communication, with its associated brain functions. According to his account, there have been four major phases in the phylogenetic development of culture and cognition, which Donald labels, Episodic,

Mimetic, Mythic and Theoretic.

The first phase, the 'episodic', corresponded to the culture of contemporary great apes and was characterized by extended family groups with division of labor and resource sharing and by the ability to perceive and remember complex events and to use this situationally-based knowledge to guide action. The major limitation of this culture was that its members were not able deliberately to construct representations in order to elicit thinking in others. They had no 'semantic' memory and, as a result, they were not able to represent a situation to reflect on it, either individually or collectively. It was thus the emergence, approximately two to one-and-a-half million years ago, of the ability to produce conscious, self-initiated, representational acts that marked the first major transition on the trajectory from ape to modern human. This development leading to what Donald called 'mimetic' culture, was characterized by the use of fire and the making of more elaborate tools and shelters and, most importantly, by the ability to pass on these procedural forms of knowing as, over many generations, they migrated from Africa into Eurasia. Such achievements obviously required a means of recalling and sharing information in the absence of environmental cues and probably utilized facial and bodily gestures, mime and modulated vocal cries.

The third phase, the 'mythic', starting about half a million years ago, corresponds to the appearance of *homo sapiens* and was characterized most importantly by the development of rapid grammatical speech. However, spoken language did not develop simply because of a further enlargement of the brain or a lengthening of the vocal tract. As Deacon (1997) argues, the developments of language and of the brain show a pattern of co-evolution, in which the emergence of language was part of a more general pattern of adaptation that, building upon the cognitive achievements of mimetic mind, strove to integrate the unconnected bits of information in a more comprehensive and coherent account of being-in-the-world. It is in this period that cultural groups began to develop creation stories and other mythic accounts of their groups' histories, which were passed on by what we now

call the ‘oral tradition.’ Emerging some 50,000 years ago, mythic culture continued, relatively unchanged, until very recently (1998) and was characterized by the physical, cognitive and interpersonal skills that we still deploy in everyday life, together with the ‘dynamic’ everyday uses of oral language (Halliday, 1993a), with their bent towards narrative construal of experience.

The final, ‘theoretic’, phase in Donald’s account is associated with the development of writing, which emerged only some four thousand years ago and was initially used mainly for accounting purposes, while Western alphabetic writing systems emerged a mere two and a half thousand years ago. However, although extremely recent in human history, the invention of writing has had crucial cognitive consequences because, by design, writing produced relatively permanent artifacts and thereby also created a medium in which memory could be externalized. As Donald observes: “Visuosymbolic invention ... [created] the exact external analog of internal, or biological memory, namely, a storage and retrieval system that allows humans to accumulate experience and knowledge" (1991, p. 309). As a result, written texts have come to permeate almost all aspects of contemporary life for, in addition to its initial function of record-keeping to serve economic and administrative purposes, it now serves two other important groups of functions. On the one hand, it provides an external representation of ‘mythic’ or ‘aesthetic’ meanings, as in narrative, poetry, drama and history; and on the other, it serves to archive information of a substantive, practical kind, based on observation and investigation, and in this way provides the basis for scientific ‘theory building’. Significantly with respect to both these latter functions, as Olson observes, "What literacy contributes to thought is that it turns the thoughts themselves into worthy objects of contemplation" (1994b, p.277). It is thus in the means that it provides for cumulative, reflective knowledge building that writing has proved to be such a powerful addition to the array of artifacts that mediate cognition.

In the foregoing paragraphs, I have presented Donald’s account in some detail because, as has recently been suggested (Nelson 1996; Wells 1999), this sequence from episodic to

theoretic meaning making is repeated in the ontogenetic development of contemporary children who are growing up in technologically developed cultures. This "recapitulation" is not surprising, since each phase in the young child's cognitive development depends on the mastery of progressively more complex means for communicating and thinking, which have to be learned through engaging in activities with other, more expert, participants. However, there is one further aspect of Donald's historical overview of phylogenetic developement that is highly significant when considering the ontogenetic trajectory, and that is that "each successive new representational system has remained intact within our current mental architecture, so that *the modern mind is a mosaic structure of cognitive vestiges from earlier stages of human emergence*" (pp. 2-3). In other words, although increasing cognitive complexity characterizes the sequence in which children master the mediational means of communicating and thinking, earlier means are not superceded; instead, what is gained at each stage continues to contribute to the array of cognitive resources that they will need to deploy in order to meet the demands that they will encounter as they gradually extend their activities beyond the home into school and eventually into the wider society.

Donald's account of the development of the modern mind attributes the advances made in each successive phase to a continuing drive to achieve a greater understanding and control of the material and social world in order to survive and improve the group's existing quality of life. Significantly, each of the major advances concerned new and more powerful means of communicating within and across generations. However, such advances could only be maintained if there was continuity from one generation to the next in the ability of the young of each successive generation to learn the means of communication that the group had developed in order to share and pass on their knowledge . It is this ability that distinguishes human infants from those of all other species. What exactly constitutes this ability has been the topic of a considerable amount of recent research.

Tomasello and colleagues, who have conducted studies of both primate and human infants, have offered the following explanation:

> We propose that the crucial difference between human cognition and that of other species is the ability to participate with others in collaborative activities with shared goals and intentions: shared intentionality. Participation in such activities requires not only especially powerful forms of intention reading and cultural learning, but also a unique motivation to share psychological states with others and unique forms of cognitive representation for doing so. The result of participating in these activities is species-unique forms of cultural cognition and evolution, enabling everything from the creation and use of linguistic symbols to the construction of social norms and individual beliefs to the establishment of social institutions (2004, p.675).

The critical word in the above explanation is *"shared"*. While other species behave intentionally, and on occasion do so as a group, they are not able to deliberately share their intentions. As a result, they cannot convey to others what they have learned about the relationships between means and ends in their shared environment; while each individual can learn from experience, there is only a very limited possibility of "teaching".

The Development of Shared Intentionality

Initially, the newborn human is totally dependent on others, particularly the mother, not only for nourishment and bodily welfare but also for access to the material environment. Babies have very limited ability to change their position in order to interact with the world around them and it is the caregivers who control what they can see, hear and touch when they are not feeding or sleeping. In the earliest stage, the infant looks at what is in view and acts on objects within range by trying to grasp and put them in her mouth. Piaget described this as the beginning of the sensori-motor stage of cognitive development. But some of the time is spent in face-to-face contact with the mother or other caregiver and, in this context, they begin to engage in deliberate mutual gaze and some behavioral imitation, such as tongue protrusion. Trevarthen (1979) refers to this

form of joint attention to each other as the establishment of ‘primary intersubjectivy’, in which each knows that they each know that they are attending to each other. By about the eighth month, there develops the stage of ‘secondary intersubjectivity, when, by following the other’s direction of gaze or point, mother and infant are able to achieve joint attention to some person or object that is of mutual interest,

At this stage, the mother frequently signals her awareness of the infant’s interest by bringing the object within the infant’s reach and/or by naming the object and making some comment about it. By doing so, the mother treats the object of attention as having meaning as well as material form. For example, an infant shows an interest in the spoon that is used to feed her and her mother hands her the ‘tool’ and at the same time names it. Then, in due course, the infant will take over the use of the word ‘spoon’ to call attention to, or ask for, the spoon, and this signing will coordinate the mother’s and the infant’s actions with respect to the spoon and the uses to which it may be put. Radzikhovskii (1984) explains this latter form of intersubjectivity as follows:

> [T]he general structure of ontogenetically primary joint activity (or, more accurately, primary joint action) includes at least the following elements: subject (child), object, subject (adult). The object here also has a symbolic function and plays the role of the primary sign. In fact, the child's movement toward, and manipulation of, an object, even when he is pursuing the goal of satisfying a vital need, is also simultaneously a sign for an adult: to help, to intervene, to take part. (...) In other words, true communication, communication through signs, takes place here between the adult and the child. An objective act is built up around the object as an object, and sign communication is built up around the same object as the sign. Communication and the objective act coincide completely here, and can be separated only artificially (quoted in (Engeström 1987).

Equally important in such events is the affective dimension of the joint activity

(Immordino-Yang and Damasio 2007). As has been argued by a variety of scholars, the motivation for the early emergence of joint attention and shared intentional actions grows out of the infant's emotional bond with his or her caregiver and subsequently with close family members and friends (John-Steiner and Tatter 1983; Bloom 1993). It is the satisfaction that the infant experiences in these events (as does also the adult) that sustains joint engagement in repeated episodes and creates that intersubjectivity which is both the prerequisite for, and the intended outcome of, their object-oriented communicative interaction (Bruner 1983).

The development of intersubjectivity of attention and action is, in fact, the earliest form of dialogue. It demands the active and collaborative participation of both infant and caregiver, as each attempts to achieve what Rommetveit calls< ?attunement to the attunement of the other>., In Donald's (1991) terms, it corresponds to the mimetic phase of the development of mind and is the necessary precondition for the infant's entry into *linguistic* communication. For as Tomasello et al. (2004) argue:

> Language is not basic, it is derived. It rests on the same underlying cognitive and social skills that lead infants to point to things and show things to other people declaratively and informatively, in a way that other primates do not do, and that lead them to engage in collaborative and joint attentional activities with others of a kind that are also unique among primates. The general question is: what is language if not a set of coordination devices for directing the attention of others? What could it mean to say that language is responsible for understanding and sharing intentions, when in fact the idea of linguistic communication without these underlying skills is incoherent.

Learning Language Through Using Language

I suspect that nobody remembers how they learned to talk, yet this learning is probably the most important that anyone ever undertakes. There are probably two reasons for its forgetability. The first is that personal (autobiographical) memory is to a large extent

dependent on occasions of recall in conversation with others (?Middleton), which cannot happen until the child has already gained considerable mastery of language. But equally important is that neither child nor parent is conscious of the learning- and-teaching that occurs in everyday interaction, which is the context in which language learning occurs. Unlike much later learning, in which learning precedes use, children learn language by using it to the best of their current ability to take part in ongoing activity.

Clearly, infants are innately predisposed to engage in meaningful interaction with others, as described above; they are also innately equipped to discover the organizational patterns of the language of whatever community into which they are born. It has been suggested that this is because they are born with a "language acquisition device" which contains knowledge of the underlying principles on which all languages are based (Chomsky 1965; Pinker 1994), though this view is by no means universally accepted. However, there *is* strong evidence that the ease and speed with which they learn is related to the extent to which parents and other family members engage in conversation with them, in which they build on the child's expressed interest and adjust their speech to the child's current level of comprehension (1985; Wells 1986). The following two examples illustrate these features of caregiver-child interaction.

In the first example, Mark (aged about 20 months) and his mother are looking out of the window onto the garden, where he can see some birds.[1]

Mark: öa [Look-at-that] . jubs [birds], Mummy
Mother: Mm
Mark: Jubs
Mother: What are they doing?
Mark: Jubs bread [Birds eating bread]
Mother: Oh look! They're eating the berries, aren't they?
Mark: Yeh
Mother: That's their food . they have berries for dinner
Mark: Oh

This conversation is very typical of those families in which beginning language learners have responsive interactants. There are several features worth noting. First, it is Mark who starts the conversation by drawing attention to something that is interesting him. His actual utterance starts with a sequence of sounds that, to an outsider, might have been totally unintelligible but Mother makes a good guess (based on having heard this string of sounds before) and responds by showing interest, followed by an invitation to Mark to say more about the birds. Finally, she adds some further information about the birds and links it to eating dinner, which is something that she knows Mark will understand.

While the first example illustrates the importance of contingent responsiveness to the child's proposed topic, the second illustrates some of the strategies that caregivers use to help children to understand their meaning intentions and to use them to guide their actions. As Cross (1977) showed, most caregivers adjust their speech to their estimate of the child's current level of comprehension and this can be seen in the following example. Mark, now aged 28 months, is trying to persuade his mother to break off from her household tasks in order to play with him; she, in her turn, tries to get him to carry out a small task for her. Mark initially does not seem to understand, so a large part of the extract is given over to ensuring that he correctly interprets her intention and successfully carries out the task. When this has finally been achieved, Mark reissues his original request, to which his mother finally accedes.

01 Mark: Play, Mummy
02 Mother: All right
03 Mark: Shish wash up, Mummy? (=have you finished washing up?)
04 Mother: Yes
05 Mark: Oh
06 Mother: Let me just dry my hands
07 Mark: Alright [Mark looks for towel]
Eyar (=here you are) [Mark gives towel to Mother]
08 Mother: Just a minute [she dries her hands]
Will you put the top back on the washing basket please

09 Mark: Uh?

10 Mother: Put the top back on the washing basket

11 Mark: On there, Mummy? .., On there?

12 Mother: Yes

[Mark makes to put the towel in the basket]

13 Mother: No not the towel **in** there

The top of the basket **on** it

14 Mark: Alright

On there? [he checks to see that he has understood correctly – but he has not]

15 Mother: Put the lid. . on top of the basket

16 Mark: On er- on there?

17 Mother: Yes please

18 Mark: Alright [Mark puts the lid on the washing basket]

Play, Mummy

The utterances to which I want to draw attention are 8, 10, 13 and 15. In 8, the mother makes her request for the first time in an utterance that makes no adjustments; she seems to assume that Mark is able to understand an 'adult' utterance. In 10, in answer to Mark's request ("Uh?"), she repeats it as an imperative. Although Mark seems to comprehend the utterance, he does not perform the action requested, perhaps because he is focused on the towel, which he thinks should go into the washing basket. In 13, the mother makes a different adjustment, contrasting "in", which is not the location she wants him to focus on, with "on", which is. However, when this still does not guide Mark's action correctly, she makes an even bigger adjustment in 15 (/ indicates a rising tone and \ a falling tone; ' indicates a strongly stressed syllable).

'Put the 'lid / . . on 'top of the 'basket

First, by breaking the utterance into two tone units, separated by a brief pause, Mark's mother organizes the message as two chunks, corresponding to the two objects that Mark is to act upon. Second, by selecting rising tone in the first tone unit, she indicates that

she is assuming that the fact that it is the lid that is to be moved is already a matter on which they are agreed; what is new (or being treated as new) is where he has to put it. Third, the use of the definite article in referring to both lid and basket indicates that she assumes that Mark already knows which particular objects are being referred to. Finally, in contrast to her initial request (8), which was indirect, the present request is direct, though this is probably more in the interests of formal simplification to ensure understanding than as an expression of any change in the actual or desired status or authority relationship between them.

There are, of course, other ways in which adults adjust their speech to ensure their child's full comprehension but space does not permit a fuller discussion of them (but see (Cross 1977). Unfortunately, not all adults have the time or the intuitive understanding to engage in interaction of the kinds illustrated in the previous examples. Some adults, on the other hand, adopt a more instructional approach, as in the following example, although this is unlikely to have a positive effect and may even discourage the child from initiating interaction (Brown 1973).[2] In the following example, Thomas (aged 25 months) expresses interest in some biscuits (probably an indirect request to have one) but is met with a quiz about the visitors for whom they had been bought. As the conversation progresses, Thomas would be justified in thinking that his mother was more interested in when and how different relatives visited than in what *he* wanted to say about the biscuits. (Of course, it is possible that this 'inquisition' was adopted as a means of distracting Thomas's attention from the biscuits – a strategy well known to parents.) Whatever the reason, the mother was not interacting in a way that supports language development.

Thomas: * * biscuits
Mother: Those were got specially 'cos we had visitors at the weekend . Who came to see Tommy? Who came in a car?
Thomas: See Grannie Irene uh car
Mother: Grannie Irene's coming next weekend . but who came last weekend?
Thomas: Auntie Gail <u>in a train</u>
Mother: <u>Auntie Gail's</u> coming . they're coming on the train, yes

Thomas: Colin uh Anne uh train

Mother: Colin- Colin and Anne came in the car, didn't they?

Thomas: Colin uh Anne . Colin uh Anne

Mother: Colin and Anne came in the train

Thomas: In uh train . auntie train

Mother: No, not auntie train, darling . Auntie Gail and Grannie Irene are coming on the train on Friday

Thomas: Auntie Gail in uh train

Mother: That's right

As this conversation progresses, Thomas's mother seems to become more and more concerned that he should get the facts, although her attempts do not seem to be very successful. Tomas, on the other hand, might justifiably thinking that his mother is more interested in when and how different relatives visited than in what *he* wants to say about the biscuits. (Of course, it is possible that this 'inquisition' was adopted as a means of distracting Thomas's attention from the biscuits – a strategy well known to parents.) Whatever the reason, on this occasion the mother is not interacting in a way that supports language development.

Support for Language Development

What emerged from the Bristol Study, and has since been confirmed by others, is that, by and large, rapidly developing children experience both a greater amount of interaction with adults and also a greater proportion of conversational episodes that respond to and extend the child's initiations. As a result, it is difficult to determine whether it is the quality of adult-child interaction or sheer quantity that is facilitative of children's language development. The answer seems to be that while quantity is certainly beneficial, there is an additional benefit to the child when adults tend not only to engage in frequent interaction but also to respond to the child's contributions in ways that extend - or help the child to extend - the topic in which he or she is interested (Barnes, Gutfreund et al. 1983). One important result is that the child is likely to acquire a larger vocabulary and,

as Hart and Risley (1999) found, this is a significant predictor of later academic success in school. However, there seem to be important consequences that are particularly attributable to the quality of talk, as previously defined. First, the child who is treated as an interesting conversational partner and whose contributions are taken up and extended by his or her interlocutor is likely to gain greater confidence in his or her own ability to contribute to collaborative meaning making and, second, he or she is likely to become more knowledgeable about the topics that are discussed

While much of the talk in which very young children are engaged at home is concerned with routine matters, such as feeding, dressing, cleaning, and monitoring the child's activity to avoid accidents, what is routine to the adult may not be so to the child. From quite an early age they are keen to "help" their parents in tasks around the home and, as they take part or merely observe, there are many things that interest or puzzle them and by the age of two-and-a- half or three, they begin to produce a spate of questions about the how and why of what is going on. Here are three examples in which a mother supports and extends her child's interest.

In the first example, James (aged 3 1/2 years) has been playing alone in the garden and, as he reenters the house, his mother tries to get him to take off his muddy shoes. However, at that moment he sees a bird outside, which interests him more than changing his shoes.

Mother: There we are . there, one slipper on
James: I can see a bird
Mother: A what, love?
James: See a bird
Mother: (whispering) Is there? Outside?
James: (pointing and whispering) Yes . see
(both continue to speak very softly)
Mother: Is he eating anything?
James: No

Mother: Where? Oh yes, he's getting- do you know what he's doing?

James: No

Mother: He's going to the- the paper sack to try to pick out some pieces- Oh, he's got some food there . and I expect he'll pick out some pieces of thread from the sack to go and make his nest under the roof, James .. Wait a minute and I'll-

[James now wants to go out to see more closely but at that moment the bird flies away.]

James: That bird's gone

In the second example, Elizabeth (aged 4 years), who is helping with the house cleaning, watches with interest as her mother shovels wood ash from the fireplace into a bucket:

Elizabeth: What are you doing that for?

Mother: I'm gathering it up and putting it outside so that Daddy can put it on the garden

Elizabeth: Why does he have to put it on the garden?

Mother: To make the compost right

Elizabeth: Does that make the garden grow?

Mother: Yes

Elizabeth: Why does it?

Mother: You know how I tell you that you have to eat different things like eggs and cabbage and rice pudding to make you grow into a big girl?

Elizabeth: Yes

Mother: Well, plants need different foods too. and ash is one of the things that's good for them

The third example involves James again, now eighteen months older. Earlier in the afternoon he had been helping his mother with the baking. Now he comes back into the

kitchen as his mother is taking the baking trays out of the oven. He hears a loud, metallic "crack" and asks for an explanation.

James: Who did that?

Mother: I expect it was the tin contracting

James: Which tin?

Mother: The one with your pastry in

James: Why did it make that noise?

Mother: Well, when it was in the oven, it got very hot and stretched a bit . I've just taken it out of the oven, and it's cooling down very quickly, you see, and that noise happens when it gets smaller again and goes back to its normal shape

James: Oh, was it a different shape in the oven?

Mother: Oh, not very different . just a little bigger

James: Naughty little tin . you might get smacked if you do it again

In all three of these examples, the mother willingly responds to the child's interest and provides information to explain the significance of what the child is seeing or hearing, even when, as in the first, this interrupts the mother's plan. All three cases show how the child's participation in the activity with the adult ensures that there is intersubjectivity of attention to what interests the child and this enables the mother to provide relevant information. The talk that occurs on these occasions thus plays a particularly important role in helping children to attend to and understand the world around them in terms of the culture's ways of "making sense" of it. For, as Halliday (1993) emphasizes, "Language has the power to shape our consciousness; and it does so for each human child, by providing the theory that he or she uses to interpret and manipulate their environment" (p. 107).

Not all caregivers take up these opportunities, however, as Hasan (Hasan 1986; 2002) found in her investigation of mother-child talk in Australia. Some of the mothers

she studied typically behaved like those in the examples quoted above, while others rarely did so. In the following example of a missed opportunity, Karen is helping her mother to wash and dry the dishes they have been using and asks where to put the pot she has dried.

> Mother: put it up on the stove and leave it there
> Karen: why?
> Mother: cause [because]
> Karen: that's where it goes?
> Mother: yeah
>
> (Hasan 2002)

Clearly, this is a routine situation in which nothing of importance is at issue. Nevertheless, what is significant about this and similar examples quoted is that the mother apparently does not hear Karen's "why?" as needing any explanation by way of response. Instead, her unwillingness to consider alternative possibilities is reinforced by her uninformative retort, "cause". The result is that, where such opportunities are habitually ignored, the message that is indirectly conveyed to children is that reasons and explanations are of little importance: the world is the way it is and there is no point in asking questions.

Hasan explains the significance of the two patterns of maternal behavior just exemplified in terms of the longer-term consequences of the contrasting "mental habits" that children develop as a result of their differing interactional experiences

> Children have a massive experience of certain specific ways of saying and meaning, which are characterised by a particular semantic direction. Participation in this discourse shapes the children's consciousness, orients them to taking certain ways of being, doing and saying as legitimate and reasonable; in short, it defines the contours of reality and provides a map for navigating that reality.

> There is consistent and strong evidence that, at this early stage of three and half to four years, the children belonging to these two groups have established different ways of learning, different ways of solving problems, different forms of consciousness, or mental disposition. … Through this mediation, the mother's culture becomes the growing child's map of reality, thus ensuring its own continuance. (2002, p. 120)

Hasan deliberately picked her sample of mother-child pairs to give equal representation to middle and working class families in order to test Bernstein's (1971, 1975) theory that the persistence of class-related differential educational achievement was not the result of differential intelligence but of class-related differences in the ways in which language was used in children's homes. Simply put, he argued that, although all had access to the same language, adults of different social classes tended to adopt characteristically different ways of using language – different orientations to meaning -- according to their involvement in material and symbolic production, either as laborers, as directors or as creators; these differences then carry over to the ways in which they talk with their children, thereby differentially preparing the children for the ways in which they are expected to use language in the context of formal education.

Hasan's findings seemed to confirm Bernstein's theory. However, she was at pains to point out that the observed differences in ways of using language are not irrevocable. As children later participate in contexts beyond the home – in school or in out-of-school activities – they may encounter different ways of saying and meaning, from which they may appropriate different orientations to meaning. Thus, there is nothing deterministic about early language socialization, as is demonstrated by the significant number of young adults of working class origin who master the genres of explicit exposition and reasoning, becoming, in the process, bidialectal. This a very important qualification because, as I shall discuss below, one of the major hurdles that lower class children face on entry to school, is the low expectations that teachers frequently have about their language and intelligence, based on their unfamiliarity with the ways in which they are expected to use language in the classroom (Michaels 1981; Heath 1983).

Whatever their home environment, however, all children successfully learn to talk before they begin their formal education. That is not to deny the very considerable differences between children in their rate of language development but, unless they are physically or mentally impaired, by five years of age, all children are able to engage in spoken interaction with their caregivers about matters of shared importance. This is a very remarkable achievement and one that would not be possible without the active contribution of their caregivers.[3]

Children's Entry into Literacy

Whilst provision for the learning of literacy is often seen as being the responsibility of the school, in highly literate societies such as those of North America, Europe, China and Japan, there can be few children who have not already discovered some of the functions of written texts in the pre-school years. In fact, the vast majority are already in the stage of 'emergent literacy' when they first go to school, for they will have come to recognize important signs such as Macdonald's Golden Arches or traffic signs, such as STOP; they will probably also have looked at magazines or been involved in using the TV guide to choose their favorite programs (Teale and Sulzby 1986; Hall 1987). What is important about these first encounters with written language at home is that these activities typically occur in the context of social interaction and as part of some larger purposeful activity.

For a substantial proportion of children being read to is probably their preferred introduction to written language. Many parents include reading a story as part of the bedtime ritual; they also choose to share a picture storybook or an illustrated magazine at other times when the child is upset or bored. Some adults start reading to their child in the first weeks after birth - or even before birth! The value of this practice in preparing children to succeed in their formal education is now well attested. For example, one of the most striking findings from the Bristol Study of Language Development was that the frequency with which children were read to during the pre-school years strongly

predicted not only their knowledge of literacy on entry to school but also their overall academic attainment five years later, at age ten (Wells, 1986).

The benefits of being read to are many. First, from listening to stories read aloud, children become familiar with the cadences of written language and the generic structure of stories and other types of text. They also increase their vocabularies in domains that are rarely the subject of everyday talk. And, equally important, they learn that books are a source of interest and enjoyment that can introduce them to real as well as imaginary objects, places. and events that they do not encounter in their immediate environment. In all these ways, the practice of reading to children in the early years enlarges their experience in ways that prepare them to make the most of the instruction they will receive in school.

Listening to a story or non-fiction book is only part of this valuable practice, however. Much of the benefit – as well as of the child's enjoyment – comes from the talk that accompanies the sharing of the book. Discussing the characters and their actions, predicting what is likely to happen next, clarifying the meaning of particular words and phrases - all these kinds of talk help the child to make connections between the meanings and language forms of the text and his or her actual experiences, including the use of language in other familiar contexts. As the child gets older, talk about the text typically begins to include attention to the written representation itself - the visual appearance of interesting words and the forms of the letters and their correspondence to the sounds of speech. Described technically as "phonemic awareness", the knowledge about the relationship between spoken and written language that a child gains in this way is certainly an important aspect of becoming literate; indeed, it is argued by some to be a prerequisite for learning to read and write.

There has been some interesting research on the different ways in which parents talk with their children about the books they read together (Dale et al., 1996; Heath, 1983). Some parents (and teachers), unfortunately, seem to think that they should quiz the children about the "facts" of the story or deliberately teach the letter names and sounds . But

where the adult is willing to follow the child's lead, the talk frequently takes the form of more open-ended exploration of what the child finds interesting in the story and, in this way, as in other activities, this helps the adult to provide the sort of information that the child wants or needs (Tizard & Hughes, 1984).

Here is one of my favorite examples of a shared story reading. It was recorded when David was three years old. At his mother's invitation, David has chosen a picture storybook, *The Giant Jam Sandwich*, which he has obviously had read to him before, and sits next to his mother on the sofa so that he can see the book as she reads.

David: The Giant Sandwich
[4-second pausel
Mother: Who's this here on the first page?
David: The wasps.
Mother: The wasps are coming. [Turns the page]
Here's some more, look. Wow!
[Reads] One hot summer in Itching Down
Four million wasps flew into town.
David: I don't like wasps . . . flying into town.
Mother: Why's that?
David: Because they sting me.
Mother: Do they?
David: Mm . I don't like them.
Mother: They won't sting you. But four million would be rather a lot, wouldn't it? . they'd get rather in the way.
[Reads the following two pages and they talk about them]

As his mother turns to the next page, David looks intently at the illustration, which shows three male inhabitants of Itching Down, each attempting in his own way to get rid of the wasps (see figure 1).

Figure 1. Illustration from *The Giant Jam Sandwich*

David: Is that a spray to shoo them away? Is that a spray to shoo them away?

Mother: Yes. It's probably some sort of insecticide . to get rid of them.

And what's that net for, do you think? [referring to a butterfly net in the picture]

David: It's for catching them with.

Mother: It doesn't seem to be much good though, does it?

David: No. They come out the holes.

Mother [laughs]: The holes are too big, aren't they? And what about this man? What's he got?

David: He's–What's he got?

Mother: What's that?

David: A note. What does the note say?

Mother: A note on a stick, is it? Is that what you think?

David: Actually it's a sound

Mother: A what?

David: A sound

What's it called on the–on the stick? What is it? What's that man got?

Mother: Well you know, um–

David: Yes . . Sign

Mother: You think it's a sign? Yes it looks very like a sign with writing, doesn't it?

David: Yes

Mother: But it isn't . it's like Mummy's–um–fish slice [slotted spatula].

David: What is it?

Mother: It's a swatter . he's going to hit the wasp with it

David: How d'you hit wasps with . otters?

Mother: Swatters? [checking] Well, they're made of plastic usually–

David: Yes

Mother: And they– you bang them down . see if you can squash the wasp .. Looks very angry [referring to the man with the swatter]
[5 second pause]

David: Is he hurt?

Mother: It looks as if he might be . he's making a funny face

David: Why he making a funny face? . Is that man– is that man shouting them to go away?

Mother: Think so. He's got his mouth open, so he could be shouting
[5 second pause as David continues to explore the picture]

Mother: Anyway–

David: Yes

Mother: [Reads] They called a meeting in the village hall
And Mayor Muddlenut asked them all,
"What can we do"' And they said, "Good question,"
But nobody had a good suggestion.
Then Bap the baker leaped to his feet
And cried, "What do wasps like best . to-

David: [completing the line] - eat

Mother: Strawberry-

David: [completing] - jam.

Mother: If we made a giant sandwich -

David: Yes

Mother: We could trap them in it.

There are a number of significant features about this episode. First, there is the pace. The interaction is very relaxed and several long pauses occur while David looks at the pictures or thinks about how to complete what he has started to say. Notice, too, how the mother takes time to explore features in which David shows interest. Particularly striking is David's interest in the man who is attempting to use the fly swatter. He apparently mistakes the object for a notice – a sign – telling the wasps to go away and, as the mother agrees, the swatter in the picture does look like a sign with writing on it, as the representation of the holes arranged in lines is similar to letters or words on a page. Clearly David has already come to understand one of the important functions of written language: to convey information or instructions. Finally, there is the collaborative nature of the event, particularly apparent in David's completion of several lines of the text. Not only is this an enjoyable experience for both mother and child, it also contributes to David's growing understanding of how written language works.

Somewhat comparable opportunities for learning can also occur in relation to the creation of written texts in the course of daily life. Tizard and Hughes (1984) cite the following example in their report of a longitudinal study of four-year-old girls at home and at nursery school.

Pauline and her mother are discussing the items that they still need to buy from the local grocery store. A neighbor has just offered to buy some of the items and Pauline's mother starts to cross off from her shopping list the items Irene was going to buy for them:

Mother: We've only got that little bit of shopping to get now [shows Pauline the list].

Pauline: Mummy? can I have one of them drinks? can I?

Mother: Get some more drink?

Pauline: Yeah . can write it down on there [points to where she wants it

written on the list] up here

Mother: I'll get you some when I go tomorrow

Pauline: Aw! [disappointed]

Mother: All right? Cause I'm not getting it today. . haven't got Daddy's money yet

Pauline: I've got no money [She seems to have misheard her mother at this point. Her mother corrects her]

Mother: No, I haven't got enough to get my shopping- all of it.

Pauline: Not all of it?

Mother: Irene's just taken five pounds. She'll bring some change back.
If she's got some, she'll bring some change back.
It's not enough to get all that, is it? [points to the shopping list]

Pauline: No.

A few minutes later, Pauline asks to look at the list again:

Pauline: Mum, let's have a look! [Mother shows child the list] Do it again

Mother: We gotta get rice, tea, braising steak, cheese, pickle, carrots, fish, chicken, bread, eggs, bacon, beefburgers, beans . . .
Oh, Irene's gone to get them [she crosses off 'beans'] . . peas, ham, corned beef

Pauline: And what's that? [points to a word on the list]

Mother: That's lemon drink [crosses off 'lemon drink']
She's just gone down to get that one, see?

Commenting on this episode, Tizard and Hughes point out that, although the mother reported that she was using the occasion to teach Pauline to count, Pauline was also learning about shopping and the function of a shopping list in planning and organizing this activity. They then continue:

> What may be less obvious is that Pauline was also acquiring some important knowledge about the nature of written language. It is often suggested that working-class children do not have much experience of their parents engaging in 'literate' activities; yet a shopping list provides an extremely vivid demonstration of the way in which written language may be used within a meaningful human activity. The power of the written word lies in its ability to link up different contexts in space or time, and here it is doing precisely that – forming a link between the home, where the decisions and choices are made, and the shop, where they are carried out. (pp. 75-76)

In the home environment, then, fortunate children experience an extended "apprenticeship" into literacy as they engage with literate family members in joint activities in which written texts play an instrumental role. In these activities, the adults' aim is not to teach their children to read and write *per se* but to assist them to contribute to the activity to the extent of their current capability while managing those parts that are beyond them.

Before starting to consider how schooling might build on the development of language and literacy that has already taken place in the pre-school years, it may be helpful to expand on the overall theory of development that has been alluded to in the preceding sections.

A Sociocultural Theory of Learning and Development

The ideas presented so far are, to a large extent, based on those first proposed by Vygotsky in the early 1930s (at about the same time that Piaget was beginning to publish his research on cognitive development). Because of political repression, however, Vygotsky's writings did not become known in the Soviet Union until the 1950s and in English translation not until some two decades later. In some important respects, Piaget and Vygotsky held similar views about children's intellectual development, notably about

the active and constructive nature of children's understanding of the world. However, they differed on three important points. First, whereas Piaget believed that children's early development resulted from their action on the material world, Vygotsky saw development as resulting from children's participation in social activities. Second, while Piaget sought for universal characteristics of development, Vygotsky recognized the importance of the children's specific social and cultural environments for the ways in which they develop. And third, whereas Piaget treated language development as depending on prior cognitive development, Vygotsky saw it as the driving force of social as well as intellectual development (Bruner 1996).

Over the last quarter of a century, it has been Vygotsky's theory of learning and development that has gradually been recognized as providing the most helpful basis for rethinking the principles on which early education should be based. It is therefore worth highlighting some of the central features of his theory (1978, 1987).[4] These can be summarized as follows:

- Human behavior and cultural development take place in joint productive activity that is mediated by artifacts, both material and symbolic.

- Language is the most important artifact – the "tool of tools". It enables: coordination of joint activity, consideration of past events and plans for the future, and representations of understanding.

- Activity always takes place within a social/cultural context that has a history on different time scales: phylogenetic, cultural, ontogenetic, and microgenetic.

- Learning is an active and constructive process; it involves a triple transformation: of the learner's repertoire for action, of the artifacts used, and of the goals and organization of the activity.

- The development of individual intelligence and personal identity occurs through appropriation of the culture's resources in the course of participation in joint activity. Since activities vary across cultures, so do the competences that children and adults develop.

- Knowledge is constructed through solving problems that arise in joint activity in the present; knowledge is only meaningful and useful when it is used as a tool for further activity.

- Learning is greatly facilitated by guidance and assistance that is pitched in the learner's "zone of proximal development".

Since Vygotsky's work is now relatively well known, I will focus principally on the last three of the above points.

Vygotsky distinguished between biologically given functions and those functions that depend for their development on the young child becoming a member of a particular culture through participation in the activities that are central to that culture. Biologically given functions include: orientation to other humans, particularly the principal caregiver, and their intentional actions; action-guided perception of the material environment; memory for significant experiences that are regularly repeated. These functions do not involve conscious awareness and so cannot be deliberately invoked. Equally important, they are private in the sense that, although socially embedded, they are only meaningful to the infant in relation to his or her own experiences.

"Higher" functions, as Vygotsky referred to them, are dependent on meanings that are socially shared. These begin to be appropriated – taken over from others – during the latter part of the first year and beyond, as infants and caregivers establish agreement (intersubjectivity) about aspects of their shared world that are of mutual interest. And, once the procedures for creating mutuality of interest are in place, the infant begins to initiate as well as to respond to invitations to explore the shared environment. But, for the

infant to understand the cultural meaning of these shared foci of attention, he or she needs to learn the language in which those meanings are encoded. How this happens can be clearly seen in example 1 above, as the mother shapes her contributions to the young child's developing comprehension. Any particular example is, of course, somewhat trivial. But, cumulatively, occurring many times a day, such events provide the meaningful material out of which the one- or two-year-old gradually constructs his or her individual model of the language system by means of which meanings are shared between members of a culture (Halliday 1975).

Language learning was one of the first examples that Vygotsky proposed as an instance of adult and child working together in the "zone of proximal development" (zpd) (Vygotsky, 1978). More generally, he characterized the zpd as the means whereby what a child can do today with help, he or she will be able to do tomorrow alone O.n this basis, hea\ proposed the following principle:

> In the process of development, children begin to use the same forms of behavior in relation to themselves that others initially used in relation to them. Children master the social forms of behavior and transfer these forms to themselves (Vygotsky 1981).

Thus, through the process of appropriation, children construct their own versions of the systems of communication (verbal, intonational, gestural, actional – and, subsequently, mathematical, scientific, and artistic) that have enabled knowledge that was constructed in the past to be made available for use and improvement in the present. However, it is important to emphasize that appropriating skills and knowledge constructed by others does not mean simply copying them. Whether in early childhood or in adulthood, appropriation necessarily involves transformation, as each individual always makes sense of new information in the light of their previous experience and their current concerns. Like Piaget, then, Vygotsky sees individual learners as constructing their own understanding of the world in which they live. However, this does not imply that all knowledge remains idiosyncratic, hence rendering shared understanding impossible of

achievement, since, over time, individual understandings tend to converge as a result of the calibration and negotiation of meaning that is an essential aspect of engaging in activities jointly with others.

Recognizing the potential problem of relativity of meaning, Vygotsky (1987) made an important distinction between 'sense' and 'meaning'. For the individual user, the 'sense' of a particular word or phrase continues to be imbued with the memories and associations of all the previous occasions in which it was experienced. However, through use in dialogue with others, words and the concepts to which they refer come to have similar 'meanings' for all members of the community that uses them (Wertsch 2000). It is for this reason that Vygotsky emphasized the importance of goal-directed joint activity. For, as Franklin puts it, "(common) knowledge is constructed (and reconstructed) in the discourse between people doing things together" (Franklin 1996; words in brackets added by author).

Finally, since all "higher mental functions" and the knowledge that they mediate are appropriated from other members of the culture in which they are growing up, it is clear that children's significant others play a critical role in their early development by making these cultural resources available to them and by assisting them in making them their own. This has been seen in the preceding examples of caregiver-child interaction at home in the pre-school years, but it remains equally true of children's learning and development in the time they spend at school.

Making the Transition from Home to School

Fifty years ago, the majority of children started school at the age of five or six years, varying from country to country depending on the laws concerning the age at which school attendance became mandatory. Prior to that time, children spent their days at home in the company of their mothers and their siblings. Now, with greater equality for women in the workplace as well as the need, in many cases, for mothers as well as fathers to work in order to enable the family to survive economically, these norms no longer

hold. Today, children may start spending time in some organized setting outside the home from a few months onwards. Not all these settings are “schools”; they range from nursery, to playgroups, daycare, or preschool classes. But what they all have in common is that the child to adult ratio is considerably greater than in the home and that the employed personnel are salaried workers rather than a family caregiver. These conditions are often less than optimal for young children. Much depends, therefore, on how these adults understand their role in meeting the developmental needs – physical, emotional and intellectual – of the children in their care (Wood, McMahon et al. 1980).

As has been emphasized, as well as a safe and interesting environment, the young child needs opportunities for sustained interaction with an adult who is willing and able to respond to the child’s interests and to help him or her to build on and extend them through talk and shared activity. All too often, however, the adults are too concerned to carry out their own agenda for the group of children for whom they are responsible to be able to give sustained attention to individual children.

A study of playgroups and nurseries in Britain, carried out as part of the Preschool Research Project directed by Jerome Bruner in the 1970s, found that the adults typically gave priority to large group management and, when they did interact with one or a small number of children, they tended to direct the interaction by asking questions and voicing their own ideas about the topic rather than making their talk responsive to the children’s contributions. However, when they saw or heard recordings of their behavior, many of these same adults explored ways to be more contingently responsive. They found that if, for example, adults avoided areas of high management such as the painting corner, sat down more in one place, and encouraged one or two children to join them in an activity, they were able to engage in sustained interaction, supporting and guiding the children to think and talk about what they were doing. In addition, they discovered that, by getting to know individual children better by spending more time in focused activities with them, observing how they approached activities and attempted to solve problems that they encountered, they were also better able to provide helpful support and to gear their instruction to each child’s current level of competence (Wood et al. 1980).

As Wood and his colleagues found, most adults working in day care or preschool settings do not see their primary role as that of teacher and they are generally unwilling to engage in set periods of formal instruction. However, there is a considerable difference between this kind of teaching and the sort of activity-oriented interaction that aims, in Vygotsky's terms, to provide assistance in children's zones of proximal development. Ideally, such assistance is what children experience with their caregivers at home and, although necessarily modified in the light of the different conditions that obtain, it is also what is most beneficial for them in preschool institutions. Indeed, with the additional opportunity to take part in shared activities and to socialize with similar aged peers, such institutions have the potential to be excellent environments for children's all-round development in the early years, provided that the adults arrange for, and take up, opportunities to extend individual children's interests and problem solving strategies.

Whether or not they have attended some form of pre-school institution, all children are required to enter the first year of elementary education at around age five. Typically, classes are larger than in preschool and, from this point on, there is a mandated curriculum that has to be followed. Increasingly, too, there are regular state- or national-mandated tests of achievement. All these factors put considerable pressure on teachers to attempt to ensure that all children proceed at the same pace, even though there is ample evidence that, at any one age, children are not all at the same developmental stage and that they do not all develop at the same rate. To these challenges facing the teacher must be added the inclusion in many classes of children who are in the process of learning the language of instruction and others who have various kinds of disability. It is not surprising, therefore, that the learning opportunities most children experience are less than optimal.

In the Bristol Study of Language Development, which was carried out when the pressures just enumerated were less severe, we conducted a comparison of children's interactional experiences just before and just after entering school. For the 32 children that we followed from home into school, we analyzed seven randomly selected 5-minute samples

from an audio recording in the children's homes a few weeks before they started school. We then made a comparable video recoding during their first few weeks in school and selected seven 5-minute samples on a similar basis. We then coded the recorded samples of interaction in terms of their linguistic characteristics and of their supportiveness of the children's linguistic and intellectual development. A summary of the results is presented in table 1.

[*Insert Table 1 about here*]

Table 1 shows that there were some significant differences between the two settings in the amount of speech produced by the children and addressed to them by their caregivers or teachers and, more specifically, in the characteristics of the children's and adults' contributions. As can be seen, when talking with an adult, children talked significantly less in the classroom than at home. At school, of course, many of the adult's utterances were addressed to the whole class or to a group that included the child being observed, so the overall imbalance between the amount of speech by the adult and by the child is understandable. Nevertheless, when the child did have an opportunity to speak in the classroom, their speech was both semantically less varied and syntactically less complex than at home. Particularly significant was the much reduced frequency with which they initiated interaction, either to make a request or to ask a question; furthermore, on inspection, their questions at school were found to be mainly about what they were supposed to do rather than about things that puzzled them. This difference in the degree to which the children were actively involved in the exploration of matters in which they were personally interested was fairly directly related to the ways in which the adults in the two settings typically engaged with them.

Table 1. Children's Experience of Language Use at home and at School

Feature of Language Use	Home	School
Absolute Values		
No. of child utterances to an adult	122.0*	45.0*
No. of adult utterances to the child	153.0	129.0
No. of child speaking turns per conversation	4.1*	2.5*
No. of different types of meaning expressed by child	15.5*	7.9*
No. of grammatical constituents per child utterance	3.1*	2.4*
Proportions (Child)	**(Percent)**	**(Percent)**
Initiates conversation	63.6*	23.0*
Questions	12.7*	4.0*
Requests	14.3*	10.4*
Elliptical utterances; fragments	29.4*	49.4*
References to nonpresent events	9.1*	6.4*
Proportions (Adult)	**(Percent)**	**(Percent)**
Questions	14.3*	20.2*
Display questions	2.1*	14.2*
Requests	22.5*	34.1*
Extends child's meaning	33.5*	17.1*
Develops adult's meaning	19.1*	38.6*

Note: Figures are averaged over all 32 children in the study.
*Statistically significant differences.

(Wells 1986, p.86)

Limiting the data to just those conversations in which the adult was interacting with the child being observed, all adult utterances were coded as to whether and in what way they built upon what had been said in the immediately preceding conversation. In both settings, utterances that incorporated matter contributed in previous speaking turns. accounted for about 50 per cent of the total. However, when a comparison was made between those adult utterances that picked up and extended matter contributed by the child (*extending* utterances) and those that developed matter previously introduced by the adult (*developing* utterances), a very significant difference was found. Whereas at home twice as many adult utterances were extending rather than developing, the ratio was reversed in the classroom, with teachers developing matter introduced by themselves twice as often as they extend matter contributed by the children.

These findings are particularly ironic in that almost half of the 32 children being studied lived in predominantly lower class areas and attended schools that were charged with providing a 'language enrichment program', since it was a widely held belief that children from lower class homes entered school with less advanced mastery of English

than their middle class peers. However, for *every* child in this sample, their language experience at school was significantly impoverished compared with that at home.[5] While there are few, if any, studies that similarly compare home and school, there is ample evidence from other studies of language in the classroom that confirm the limited nature of most children's opportunities to use and extend their language ability to the full in the elementary years at school (Tizard and Hughes 1984; Cazden 1988; Edwards and Westgate 1994; Nystrand 1997; Galton, Hargreaves et al. 1999).

In the light of the arguments developed in the first part of this chapter and particularly those concerning the central role of language in children's intellectual, social and emotional development, as explained by Vygotsky and other sociocultural scholars and researchers (Hicks 1995; Mercer 1995; Bruner 1996), these findings point to one of the most troubling aspects of most education in the elementary years (and beyond). And, unfortunately, the situation has recently deteriorated still further as a result of the growing emphasis on ensuring that children perform well on the mandated standardized tests. Indeed, in some schools in my vicinity, there is practically no 'exploratory talk' (Barnes 1976) at all, as teachers are obliged to teach to an imposed program in which their every activity is prescripted and no deviations are permitted.

At the same time, however, there are classrooms and schools in which serious attempts are being made to create more challenging and supportive environments for learning and development, where teachers recognize the critical importance of dialogue as the medium for learning and teaching. These will form the basis for the concluding sections of this chapter. But before turning to them, it is important to consider how literacy fits into the overall picture.

Literacy

First, we should be clear why we believe it important for all young people to become literate. Written language, as Donald (1991) reminds us, is first and foremost a form of external memory. It allows us to preserve information – ideas, plans, reports and instructions – in a permanent form that can be accessed at different times and places, by

self as well as others, without it having to be commited to individual people's biological memories. Over the course of history, it has enabled kings and governments to keep track of people's assets and to tax them accordingly, to promulgate laws, and to administer public services. In more recent times, enhanced by visual media, such as graphs and diagrams as well as photos, it has provided the means for the cumulative development of science and technology, as a medium for broadcasting news and for political debate, and most recently, for advertising of all kinds and for purchasing at a distance. Contemporary societies could not survive without a literate population and individual members are at a disadvantage if they cannot participate in the various transactions that are mediated by written text. These are, in themselves, good reasons for making literacy learning a key part of any school curriculum.

However, an equally good reason is what literacy provides by way of enhancement of each individual's unique development. Quite apart from the role of written texts in making available the knowledge accumulated in the different academic disciplines that provides the foundation of school learning and access to higher education, books, magazines, Internet web pages, art media, and instruction manuals allow each of us to develop interests and acquire expertise in areas of our own choosing and to share our interests with others. But perhaps most importantly, being able to write to communicate with ourselves as well as with others provides a means of reflective self-development that is unequalled in power and versatility by any other means. And this, in turn, makes us each of us better able to contribute to the society to which we belong. There is thus every reason to emphasize literacy in children's development.

What is significant about the various kinds of literacy referred to above is that they are all functional in the various spheres of contemporary life in which they are found. When people read or write and use other literate modes of communication, they do so for some purpose and that purpose determines their choice of genre and style. People rarely read or write for the sake of engaging in the activity for its own sake. This should be the first guiding principle in planning the activities by means of which we hope to enable young people to become literate. In other words, we should assume that the best way to help

them to learn to read and write is by providing occasions for them to engage in reading and writing for some purpose. As Vygotsky wrote, "teaching should be organized in such a way that reading and writing are necessary for something … Writing should be incorporated into a task that is relevant and necessary for life" (1978, pp.117-118). As he fully understood, without the motivation created by purposes of their own, children fail to develop the drive to learn to read and write and, as a result, they have considerable difficulty in mastering the knowledge, skills and dispositions that enable them to become purposeful, fluent, and critical readers and writers. For this reason, literacy in school should not be treated as a separate self-contained 'subject' in the curriculum but as a 'tool-kit' that can be used as appropriate to contribute to work in theme-based studies of various kinds.

Earlier, two examples were presented of how children begin to learn about the functions and values of literacy in the home environment. The first illustrated how sharing a story can be an enjoyable experience in its own right while, at the same time, developing the disposition to actively interact with what is read in order to enlarge one's understanding of possible worlds beyond one's first-hand experience. The second illustrated the practical utility of reading and writing in organizing everyday activities, such as buying needed foods and drinks. Many more examples could be given of how children begin to learn about the functions and forms of literate activities in family life (Taylor 1998). What was emphasized in presenting these examples was the way in which the mothers interacted with their children about the text they were reading or writing together. Rather than focus on the form – letter-sound relationships – they focused on how the child made sense of the text in terms of his or interests and concerns; instead of imposing their own understanding and values with respect to the text in question, they supported the children's own quest for understanding (DeBruin-Parecki 1999). This is the second guiding principle for organizing literacy instruction in school.

In certain fundamental respects, then, learning to read and write are similar to learning the spoken form of language. But putting these principles first does not mean ignoring the very real differences between the two modes of language use. Writing is a second-order

form of language in that it uses patterns of visual symbols to represent the meanings that are expressed in speech. In alphabetic languages, such as English and other European languages, the written code fairly directly represents the sounds of the spoken word and so, at least initially, emphasis needs to be given to mastering the letter-sound correspondences that aid in decoding when reading and in spelling when writing. These are essential skills and, for many children, learning them may require systematic instruction and practice. But unless learning these skills is set in the context of reading and writing for purposes meaningful to the learner, there is a danger that children will become adept at coding and decoding instructional material but will either have difficulty in bringing these skills to bear when attempting to read and write autonomously or will become so bored with what for them are purposeless activities that they never discover the value to themselves of being able to read and write (Pressley 2001).

The third guiding principle follows from the first two: No large group of children, such as make up a typical elementary school class, can be taught effectively by having everyone carry out the same program of activities in unison. Instruction needs to be differentiated according to individual interests, strengths and needs for assistance. In other words, instructional planning should be as concerned to work with each child in his or her zone of proximal development as to ensure that externally required curriculum guidelines are followed. While this principle applies at any age, it is particularly important in the early years.

The work of Marie Clay (2005; Clay 2005) offers a particularly well thought-out and principled approach to helping children to master the ‘basics’ of print literacy, in which the sequence of instruction is tailored to the particular needs of individual children. In the United States, her approach has become known through its application in *Reading Recovery*, but the principles involved should not be thought of as applying only in remedial contexts. Using both children’s own writing as well as a wide selection of short illustrated books as the basis for talk about texts and how to make meaning with them, her approach can be adapted to suit the range of needs for assistance found right across the early grades.

Particularly significant about Clay's work is her emphasis on treating spoken and written language as complementary. Because fluent reading and writing are normally carried out individually and in silence, the mental processes involved cannot be inferred by a preliterate child in the same way that they can for the processes involved in material activities, such as cooking, cleaning or doing the laundry. It is essential, therefore, that a teacher or some other adult talk with the child about how texts work while actually engaged in reading or writing. Encouraging children to write as best they can is particularly helpful because, even more than reading, it draws attention to the decisions that have to be made in order to represent the meanings that the child first composes in speech in the sequential construction of the written text (Clay 1983).

Another good way to have an adult read and write with a child is to encourage them to choose a book to take home to share with family members. In my son's K-1 class, the teacher had two large collections of appealing books, some of them in languages other than English for the English language learners. The children were regularly encouraged to choose two books to take home: the first would be one that they would read to a family member and the other, more difficult, would be one that they would ask to be read to them. Parents were encouraged to talk with the child about the books they chose in the ways described earlier. This scheme proved very popular with children and parents alike and was soon being used in other schools in the district. It also inspired quite a number of parents to come to the classroom to continue the book sharing there (Wells, J. and Hart-Hewins 1990).

Mary Ann Van Tassell decided to take this idea a stage further by asking her six and seven-year-olds to talk about their responses to the stories they were reading with their parents. In order to have a record of their responses, she asked the parents to write the children's reflective comments on Postit notes and to stick each note on the appropriate page of the book. Then, when several children had read the same book, she planned to discuss the book with them and create a web in which their notes were spatially related in terms of ideas that were connected in some way.

The following episode occurred after three children had read *Mrs Katz and Tush* (Polacco 1992), a story about an old woman who lives alone and is befriended by Larnell, a boy who gives her a kitten for company. Each of the children had contributed a number of 'seeds' on Post-it notes and, in this extract, two of them are deciding with their teacher how to arrange them on a large sheet of paper to show the connections among them. (The third child is absent because he is sick.) So far, notes referring to cats have been arranged in one group and they have been considering a note that refers to the Jewish custom of putting stones on the graves of loved ones who have died. Karla has found two seeds that she thinks should go together.

Karla: (pointing to a 'seed' and reading) It's because it says "It is good that Larnell and Mrs. Katz became friends."

Teacher: -"that Larnell and Mrs. Katz became friends"

Karla: And this says "That was nice what people do to see and say 'Hi' to people that died"

Teacher: -"that was nice what people do to see and say 'Hi' to the people that died"

Ashlynn: -"what people do to see and say 'Hi' to the people that died"

Teacher: Yes . so what is it that's connected? -that connects them? What is it that connects them? (the two seeds just mentioned)

Karla: <That they're both like - they both say what * *>

Teacher: How is this- you mean because this (pointing to the first seed) shows that they were friends?

Karla: (nods)

Teacher: And THIS is saying that they're friends? (pointing to the other)

Karla: (nods)

Ashlynn: Why don't we put this one before that one <altogether then>?

Teacher: Well are these all connected though? (referring to the seeds that

Ashlynn indicates, which refer to Passover, friendship, and the graveyard)

Ashlynn: No

Teacher: They're not - this one (the seed of friendship) is connected to all of those

Could we put it kind of in the middle and put these around it?

Ashlynn: Yes

Karla: Yeah

It must be unusual for six-year-olds to be engaged, as they are here, in considering the relationship between the different themes of a story and providing justifications for their opinions. But what is particularly interesting about the procedure that the teacher has invented is that, by having the children's comments on different aspects of the story written on small Post-it notes, their ideas do indeed become objects that can be compared, and physically placed in different relationships to each other. As the teacher suggests:

> Throughout the conversation, both girls struggle to explain their reasons for connecting seeds. This is the meta-cognitive talk. They are not used to making these thoughts explicit, and it is exactly this type of talk that moves the conversation beyond discussion of the literal into the more abstract themes of the story. At this point, both students needed help in making these connections explicit. (Van Tassell and Galbraith 1998)

As she also tells the children at another point, there is nothing final about the first way in which they decide to arrange them, as they can always move them later, if necessary, when they see a better way of relating them. As they arrange the seeds in the web, therefore, the children are learning a very important feature of composing in writing: that ideas can be revised, as can the way in which they are put together in the text as a whole. And, although they are probably not fully aware of it, they are also learning that when

ideas are arranged in different combinations, new meanings emerge from these alternative juxtapositions. As Karla added when they had completed the task, "We never knew things could fit together like that."

Following the use of the web in Mary Ann's class, her colleague, Barbara Galbraith, extended the idea of a web to investigate story elements, such as plot, key events, and characterization, in the novels that her grade three students were reading. Here, too, the web served as a form of synoptic text, enabling the students to make connections at a meta level that they were less able to see as they simply read through the story, page by page. And, once again, it was through talking together about the "seeds" they had identified that they were able to build larger patterns of meaning.

Reading and Writing with Peers

So far, the emphasis has been on tailoring instruction to the needs of individuals. But the differences between children in their degree of understanding about how written language works can be turned into an asset through children helping each other and sharing what they know. One way of doing so can be seen in the next example.

In Karla Poremba's kindergarten class (Richgels, Poremba and McGee, 1996), children often find a new text on display as they enter the classroom in the morning and they are encouraged to make time to take a careful look at it. Poremba selects texts, such as a poem, a recipe or a story, that relate to what they are doing in class and uses them for shared reading with the whole class. However, before she reads the text, she engages the children in an activity that she calls "What can you show us?" She invites individual children to come and point to something they know about the text.

One day in early October, the children found the following letter from Uncle Wally (one of the large dolls in the book corner):

Dear Kindergarteners,

It is fall!
Fall is apple time.
We picked an apple
On a tree.
Yum! Yum!

Love
Uncle Wally.

Poremba had drawn an apple over each occurrence of the word ‘apple’ and a tree over the word ‘tree’ and these were what the first child drew attention to. Next, Nathan pointed to the’K’ in ‘Kindergarteners’ and then to the ‘KP’ written on his name collar so that other teachers could identify him as a child in Karla Poremba’s class. He did not know the name of the letter but other children were able to inform him. Once the ‘K’ in the long word at the beginning of the letter had been located, Erin called out ‘Kindergarteners’ and Jason then went to the easel and, pointing to the words, read ‘Dear Kindergarteners. After Jason, with help from others had read some individual words and then the phrase ‘on a tree, Eric offered what he knew, associating individual letters with classmates names: "The Y for Freddy (pointing to the ‘Y’ in ‘Yum’ .. and he has an ‘F’ (pointing to the ‘F’ in ‘fall’) .. and an ‘I’ for Ian (pointing to the ‘I’ in ‘It’) .. There’s an ‘E’ for me (pointing to the end of ‘tree’)." Elise next told what she thought the letter was about: "They got in an apple tree." Finally, Kaitlynn returned to the letter ‘K’, which she identified in the middle of ‘picked’ as well as the first letter in her name.

In these exchanges, each child is recognized for what he or she knows; at the same time, there is an opportunity for collaboration as one child builds on what another has

contributed. Between them, the children draw attention to many aspects of the written code and the teacher is able to see what sort of individual assistance to give to each child.

The next example involves a different kind of talk about a text, which occurred in a class of eight-year-old students, many of whom were still mastering English as their second language. Here, a group of five Portuguese-Canadian children are working together collaboratively to create a text to share with the rest of the class. The task the teacher had set was to base what they wrote on the research they had been doing on dinosaurs, and they embarked on the task with enthusiasm. In the following extract, we see them not only generating an amusing "story", but also helping each other with all aspects of the writing process. The transcript below contains a small number of extracts from a conversation that remained focused on the task for about 40 minutes.

Tanya: Think of the title .. Dinosaur Time.

Tony: Back in the dinosaur time?

[Children sit in silence thinking for a while]

Tanya: Dinosaur school?

Tony and Barb: (simultaneously) Yeah

[The group agrees eagerly; several laugh]

Barb: It will be fun then

Tony: How do you spell dinosaur?

[Several look round the classroom to find the word displayed]

Having fairly quickly decided to write about "Dinosaur schools", they begin to negotiate the opening of their text. The exact location of dinosaur schools is discussed over the next several turns and the inside of volcanoes is decided to be a suitable location. Together they generate the first sentence and Tony begins to write.

Tony: Baby- (as he writes)

Many: Baby dinosaurs . dinosaurs (group members chime in)

Tanya: Hm you put dinosaur ..DinoSAURS (emphasizing the plural form)

Tony: I can't do anything now (refers to erasing)

Eric: What did he do wrong? dinosaur school?

Tanya: Dinosaurs, he must put dinoSAURS (again emphasizing the plural) like thousands of them, more than one

Tony: So, so that's what the school is

Tanya: A school with one kid? (laughs)

Barb: Dinosaur school, school of one kid

Tanya: Baby dinosaurs must go to school inside a volcano (laughs) .. once every five years, a fire alarm will go on as an eruption.

Barb: Ya, that's funny (everyone laughs)

Tony continues to scribe what the group has composed while the others monitor and comment on what he is writing.

Tony: (reading as he writes) Baby dinosaurs schools are in- are in . volcanoes

Tanya: WERE in

Eric: Were in-

Tanya: They are not right now, are dinosaurs living right now?
WERE (repeating as Tony writes)
[Tony continues to write, vocalizing each word as he writes it]

Tony: - were in volcanoes, in a volcano

Tanya: In volcano . S (emphasizing plural)

Tony: V O K - V O K (invents spelling) .. V O K - K A

Eric: Tony, I think you've got it wrong ..it's V O L - volcanoes

Tony: (continuing to vocalize as he writes) Every five hundred years - '

Eric: I know ***** (his utterance is unclear but seems to be raising an

objection)

Tony: Okay

Tanya: Yeah, five years because they won't be alive in five hundred years

Eric : Yes, they would

Tanya: But they wouldn't be babies anymore

Tony: (agreeing) Yeah

Barb: They'll be five

Eric: So they'll be in grade six **

Tanya: They are in grade six .. they'll be in school, they'll be teenagers, not babies anymore

Tony: I made a mistake

Barb: Who cares?

Tanya: They'll .. they'll be in high school

These extracts, which involved only the first few lines of their final text, show very clearly the complexity of the challenges facing novice writers. First there is the search for what to write. Here the decision was somewhat assisted by the teacher's specification of the general topic and by the knowledge that the rest of the class was the intended audience. But even when the general idea has been decided on, as it was fairly early in this writing episode, writers have to generate specific detail and ensure that there is coherence in the emerging structure of meaning. Then there is the problem of 'wording' - the choice both of appropriate words and of their correct morphological structure for their role in the context of the sentence. Finally there are the conventions of spelling and punctuation to grapple with as the spoken version of the text is encoded in graphological form. Not surprisingly, managing all these levels simultaneously can seem an overwhelming task, particularly when the physical formation of the letters is still also very time-consuming.

For this group of writers, all of whom were still mastering English as their second

language, there were obvious benefits in undertaking this task collaboratively. Not only were they able to draw on the diverse range of relevant expertise that was distributed among the group, but together they were able to overcome the problems of short-term memory involved in retaining the intended meaning that had been composed while dealing with the difficulties of accurately representing it on the page. And, most important, their shared commitment to the task sustained their motivation to continue.

Here is the text that they had produced at the end of the forty minute activity. Probably because of its witty inventiveness, the class judged it to be the best produced by any group.

> DINOSAURS SCHOOL…
> Baby DINOSAURS Schools were in VOCKANOS.
> Every 5 Years The Fire Drial would Go On as an ERUPTION
> THEY WriHT About People. THE Paper was 10 mters long. And
> The Pencil is 5 mters long. There Close is poka Doted. And THERE
> Poget is about THE Fugter. THE Librery is called Home read stone.
> And The books or made of saled. Rock. THEY live in haya rock.
> THERE Brians or as small as marbells. THERE LUnCH is Brontobrgers.
> THERE TOYS ARE all With batreries, THERE HOUES is MADE OF Pebulls.
> by Tony, Tanya, Barbara, Margaret and Eric.

The practice of writing collaboratively is also helpful for older students, particularly for second language learners or students with learning difficulties who lack confidence in their ability to compose extended texts on their own. Not only does the social nature of the enterprise increase their interest in and enjoyment of the task, but where they might be reluctant to review and revise their text when writing individually, they are more willing to do so when their contributions are challenged by peers whose opinion they value. Of course, the ultimate aim is that they should take responsibility for the texts that they produce in solo mode, but for many students the support of collaborative peers is an

excellent way of assisting them to reach this stage.

Creating a Classroom Where Reading, Writing and Talking Are Valued

As emphasized earlier, speaking, listening, reading and writing are modes of communication about matters that are of personal and social significance to those involved. In Vygotskian terms, they mediate various forms of joint activity. Spoken and written interaction are thus the principal means of "thinking together" (Mercer 2002) and, as the various genres of communication are appropriated from participation in dialogue with others, they become the means for individual thinking in the dialogue of "inner speech" (Vygotsky 1987) and reflective writing.

These may seem rather advanced forms of language use for children in the early years, but this need not be the case. Under appropriate conditions, even first graders are able to talk constructively about matters that they think are important, as Gallas found when her children engaged in 'science talks' (Gallas 1995). Similarly, when they write with and for each other, instead of for the teacher, they are able to use the emerging text as a means of thinking together, as was seen in the case of the authors of 'Dinosaurs School' (cf. also Dyson 1993). But whether in speech or writing, for sustained dialogue to develop, certain conditions must be met.

- The topic must be of interest to the participants;
- Individual students must have relevant ideas, opinions, or experiences that they want to share;
- Others must be willing to listen or read attentively and critically;
- The teacher must share control and the right to evaluate with students.

Over a period of almost ten years, I worked with a group of elementary teachers to explore ways in which these conditions could be created in regular classrooms in Metro Toronto. As the title of our project, 'Developing Inquiring Communities in Education" (DICEP) suggests, we believed that the best way to proceed would be to approach the

curriculum through theme-based inquiries, in which children worked in self-chosen groups on aspects of the theme in which they were particularly interested.

Vygotskian theory was one source of inspiration for our work; another was educational philosophy of Dewey. Of one thing Dewey was quite sure: in order for students to engage with a topic, it must be of interest to them. But it must also be one that poses problems or raises doubts that will motivate the students to explore further. This led him to place great emphasis on inquiry, both as the motivation for engaging in, and as the organizing principle for the selection of, learning activities. These, he believed, should grow out of first-hand experience and be largely determined by the students themselves, with the teacher acting more as facilitator than as director. While more recent writers in this tradition have placed less emphasis on individual choice of topic for inquiry, they agree with Dewey in emphasizing that the key characteristic of investigatory activities should be that they take as their object significant and often problematic features of the students' experience and environment and have as their intended outcome a growth in the students' understanding, where this is taken to mean, not simply factual knowledge, but knowledge growing out of, and oriented to, socially relevant and productive action (Cohen, McLaughlin et al. 1993).

Vygotsky, on the other hand, while agreeing on the importance of interest and the motivational value of inquiry, placed much greater emphasis on collaborative group investigation. This was in part because he saw the social group, in this case the classroom community, as the source from which the individual appropriated the language-mediated practices that are the foundation of higher mental functions. But equally important was the much more active role he attributed to the teacher in selecting the topics for students' inquiries and in providing guidance as they engaged in the problem solving to which these inquiries were intended to give rise. It was in such situations, he believed, that the teacher was able to work most effectively with students in their 'zones of proximal development (Vygotsky1987).

However, for both Dewey and Vygotsky, despite their different emphases, one of the

most important functions of inquiry was to generate occasions for purposeful dialogue. When students pursue investigations, they develop ideas and acquire information that they want to share and debate; at the same time, the problems they encounter call for the joint consideration of alternative possible solutions. In these circumstances, students have reason to learn the skills necessary for using reference materials, taking notes, and engaging in productive dialogue, Over time, they also develop the disposition to approach problem solving of all kinds in this way, which will be of value both to them in their futures and to the larger society of which they are becoming members.

Over the years of the project, we constructed a general model of 'dialogic inquiry' that we found helpful as a tool for thinking about the key components of a theme-based curriculum unit (see Figure 1). The overall aim is to engage children in collaborative knowledge building through action, talk, and use of written text. Key is the choice of theme and the way it is launched. The theme should allow multiple approaches, which both enable connections to be made to curricular guidelines and suggest a variety of student inquiries. Students choose the topics they wish to investigate and small groups are formed around these topics. In their groups, students engage in three components: research to gather relevant evidence; interpretation of the evidence in the light of their questions (these two components are repeated as necessary until the group considers it has made answers to the questions or changed their questions in the light of the evidence they have collected); and presentation of the results of their investigation to the whole class, either orally or through poster presentations. Each of these components involves the students in: practical investigation (experiment, observation, survey, etc.) as well as library research; dialogue in planning and carrying out investigations, interpretation of the evidence, and preparation for presentation; written notes in a log or journal and, where appropriate, the creation of a written report. In some ways, however, it is the final component, Reflection, that is the most important. In a whole class discussion, the students consider the relationships between the different groups' results, exploring discrepancies and alternative interpretations, and decide what they now understand about the theme and what further questions have arisen as a result. At the same time they also discuss the processes in which they have engaged and consider ways in which they could

improve in the future (Wells 2001; Wells 2002).

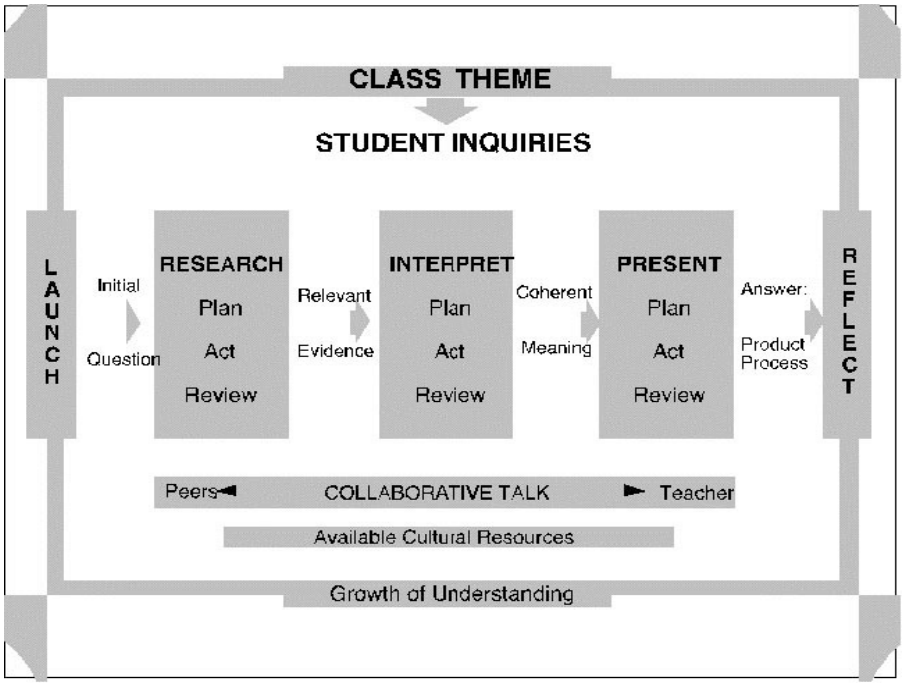


Figure 1. Model of Dialogic Inquiry

The preceding description of the model is obviously very schematic and should not be taken as blueprint to be followed in a mechanical manner. What is important is the identification of the key components and the relationships among them. A further point to note is that some themes may well develop into sub-themes corresponding to curricular subjects. For example, a theme on Monarch butterflies might include a sub-theme on the mathematics of the measurement of distance, time and speed, another on the metamorphosis of caterpillars into butterflies, and another on color in relation to painting pictures of the butterflies' wings (Gamberg, Kwak et al. 1988; Harste 1994).

The value of the model to us, as teachers, is that it gives a central place to the investigation of students' questions, allowing them to bring their interests, skills and knowledge to bear in genuine inquiry and the dialogue that this requires while, at the same time, pushing them "to go beyond themselves" (Vygotsky, 1987) in developing new interests, skills and understanding and in making connections between the new information and what they already know. Moreover, the overarching theme enables the

students to benefit from each others' newfound expertise and to learn about the relationships among the different questions they have addressed (Brown and Campione 1994). Finally, working together in this way creates a classroom ethos of inquiry, collaboration and dialogue, which encourages each member to learn from and with each other.

Space allows the inclusion of only one example of the application of this model. It took place in a grade three class in a school in the heart of Chinatown where, not surprisingly, the majority of children spoke English as a second or subsequent language. For two weeks in February the whole school adopted the theme of 'Winter' and Ann Maher, the teacher of this particular class, decided to launch the theme by *reading The Cremation of Sam McGee* (Service and Harrison 2006). Following the first reading of this gruesome but intriguing poem with its marvelously evocative illustrations, the children worked in groups to create a representation of some aspect of the poem that had really impressed them. One group obtained a large cardboard carton from the school janitor and made it into a model of a bookstore, with cut out windows in which tiny books were displayed and a poster advertising the illustrated version of the book was posted on the bookstore door.

Two days later, the teacher read the poem and asked the children to come up with questions about the story and its location in the Yukon that they would like to investigate. One group chose to find out about the animals that live in the Yukon, and one boy made a model of a wolf out of wire and papier mache and then, to make it more realistic, (being unaware of the irony) covered it with a sheepskin rug brought in from home. A second group found out about the history of the Yukon and the Canadian Gold Rush, while a third made a model of Dawson City, based on photographs they found in a book that the teacher had borrowed from the library. Marilda and her friend Jacinta decided to investigate the weather in the Yukon and conducted a variety of practical investigations. Marilda was fascinated by the wind and, following instructions found in a publication for schools from the Ontario Science Centre, constructed a small weather vane, which she took into the school yard during recess to demonstrate its working to any of her friends

she could buttonhole.

When she came back into the classroom, Marilda approached the teacher as soon as she was free in order to show off her ‘windfinder’. Here is a transcript of the discussion that took place when the teacher gathered a group of students to listen to Marilda’s explanation of how the windfinder worked.

Marilda:	It's here, my windfinder
Teacher:	OK, so here's your windfinder
	That's a good name for it, isn’t it?
Marilda:	(demonstrates by blowing to make her windfinder work)
Eric:	Oh Miss-
Teacher:	Eric, have you seen this windfinder?
Eric:	Yes, last year we were studying about it
Teacher:	Mm
	(to Marilda) Can you- can you explain- like . can you explain how it works?
Eric:	Yes I know how it works
Teacher:	(to Eric) Oh excuse me . I was really speaking .. to Marilda ..
	(to Marilda) Can you explain it?
	(to Maria) Maybe you'd be interested in this . do you want to come over here? (putting her arm round her to bring her closer)
	(Jacinta and Maggie also join the group)
Marilda:	When you- when the wind blows . it's trying to find the wind
	When the wind blows this points to which direction it's coming from (pointing to the pointer on her wind finder)
Jacinta:	Yeah like- (she takes the windfinder and demonstrates)
Marilda:	See, <u>it's pointing round to you</u>
Teacher:	<u>Why's it pointing</u> to you? (referring to Jacinta, but addressing the question to the whole group)
Eric:	Because she's the one who blew

Marilda:	And if you keep on- (takes back windfinder from Jacinta)
	(Maggie tries to blow)
Jacinta:	You have to blow hard
	(Maggie blows hard)
Marilda:	OK now blow again (Maggie blows again)
	It stays in the same spot cos- cos the wind's-
Teacher:	Why?
Jacinta:	Cos it needs a big surface to blow on . to push it
Teacher:	Come on (encouraging Marilda to continue)
Marilda:	Cos the- cos the wind's blowing that direction and it-
Maggie:	No . why did it go?
Marilda:	- it's not coming in a different way
Eric:	Because it doesn't have a piece of paper over here (pointing to the end of the straw with the paperclip)
Teacher:	What would happen if you had a piece of paper over there?
Marilda:	It'd turn around?
Jacinta:	Because it needs a big surface to blow on to push it .
Teacher:	So it's-
Eric:	And that's a big surface
Teacher:	So it's got something to do with the surface of the paper
Children:	Yeah
Teacher:	And the air?
Eric:	Mm
Marilda:	And the- this thing. maybe (pointing to the bead)
Teacher:	Oh and-
Eric:	It's the needle
Jacinta:	No I think it's got to turn-
Eric:	It's the needle it's the needle that- well not the needle but the . the straw . it's the straw has the hole
Marilda:	This makes it-
Eric:	The straw has the hole and the hole like causes it to . to make a

	wiggly turn
Teacher:	Yes (somewhat doubtfully)
Marilda:	No it's this that makes it-
Teacher:	Which? The bead?
Marilda:	Yeah
Teacher:	The bead . you think the bead is very important?
Marilda:	Yeah
Teacher:	Why? Why do you think that's important?
Jacinta:	Let's try it without the bead
Marilda:	Cos the-
Teacher:	(to Jacinta) That's a good idea . that- that would . be a way of finding out if it's really important (to Marilda) First, why do you think the bead's important?
Marilda:	Well .., some machines they have a-
Eric:	It's a nuisance (referring to the bead)
Marilda:	- the little round things
Eric:	Yes but some machines don't have them
Teacher:	Ballbearings? You mean ballbearings
Marilda:	Yeah . so maybe like it might make it – might help by spinning it . like spinning
Teacher:	It's got something to do with the spinning and then making it easier to spin I like your idea, Jacinta . that's a very interesting idea, taking the bead out . I don't know whether Marilda would . want to do that now or not
Jacinta:	- want to-
Marilda:	OK I'll try it

I have quoted this episode in full because it illustrates so well many of the points made earlier in the chapter. First, the teacher gathers other children to form an interested audience for Marilda's explanation, thus giving recognition to her achievement. This is

particularly important as Marilda, a Portuguese Canadian, had been retained in grade three because her previous teacher had considered her to be making inadequate progress; valuing her invention as she does, the teacher does much to boost her self-confidence. Second, the teacher encourages Marilda to say more about what she is interested in rather than taking over and speaking for her. In this respect, it is noticeable how the teacher's moves focus the discussion by summarizing the various children's contributions toward constructing an explanation while ensuring that Marilda's more tentative proposal is given full consideration. It seems clear that, while initially Marilda did not seem sure how to respond appropriately to the teacher's request, she learned through her participation in this collaborative attempt what it means to give an explanation of "how [the windfinder] works." In other words, she received support in her zone of proximal development from the other children as well as the teacher.

At the end of the unit, the class held an open evening for parents and other visitors, at which they displayed the outcomes of their investigations and answered visitors' questions. Marilda had two artifacts to show: her windfinder and a demonstration of convection currents. She also had written texts to describe and explain what she had done and learned. But, most significant as evidence of her increased self-esteem was the audio recording she added to her display so that interested visitors could hear her account if she happened to be away from her display and unable to answer their questions directly.[6]

The Teacher's Roles

Teachers of young children have many roles to play: maintaining productive relationships with parents; monitoring children's physical health and emotional wellbeing; promoting positive social relationships, self-discipline, and concern for others; amassing or borrowing additional resources for the units they plan to teach, including building a classroom library; and many more. Here, I wish to focus on the teacher's roles in relation to the curriculum and children's academic progress.

I have found it helpful to think of the teacher's role as operating at two levels. At the first

level, the teacher is responsible for choosing themes that both incorporate learning goals from the grade level curriculum standards and take account of the children's interests and out-of-school experiences, and then of devising a range of activities through which the chosen theme can be explored. To a considerable degree, this role concerns planning and organization in order to provide the conditions in which his or her charges can learn new knowledge and skills and develop self-confidence as inquirers and problem posers and solvers. This role also includes presenting new information and procedures through exposition by self or other experts (either in person or through their writings), and the use of various forms of direct instruction, when appropriate.

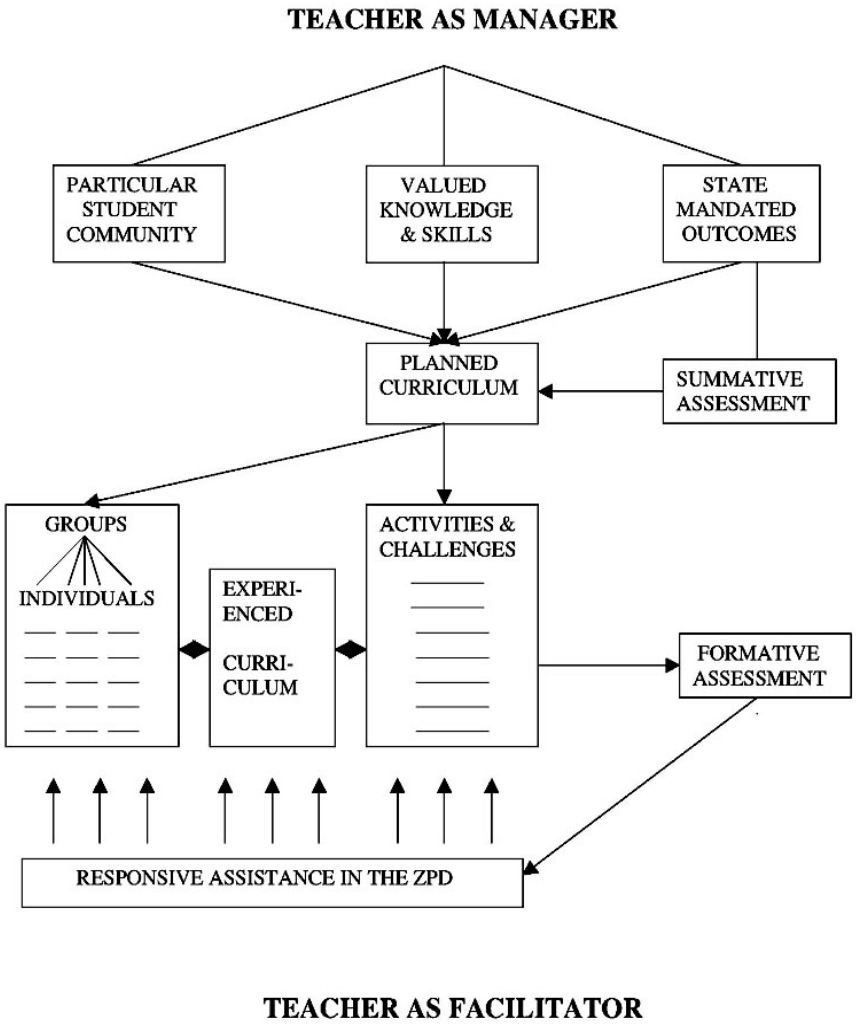
At the level of individual students or small groups, however,. the teacher has the rather different role of faciltator, as she or he works with the children in their zones of proximal development to support and guide their endeavors. In this role, the teacher acts more as respondent to the students' implicit as well as explicit requests for help than as instructor. There are many forms in which help can be given, such as prompting, inviting the child to talk about what he or she is trying to do and what strategies he or she has available that may be useful, asking specific questions that may help the child to see what to do next, drawing attention to some aspect of the task that he or she seems to have ignored, and so on (cf. (Tharp and Gallimore 1988). There is also a place for direct instruction, but now not broadcast to the class as a whole but, instead, what might be termed "just in time teaching" to enable the child to proceed with success. The important point about such scaffolding is that the aim is to enable the child to manage the task without help in the future. This has been called the "handover principle", the aim of which is to foster children's confidence and autonomy and to wean them away from dependence on the teacher or other props (Maybin, Mercer et al. 1992)

[*Insert figure 2 about here]*

Cutting across these two levels is the activity of assessment. This is an essential aspect of effective teaching at each of the two levels. At the Facilitation level, formative assessment should be constantly ongoing, as this is how the teacher can adjust the

assistance she or he provides when interacting with individual students or groups. This form of assessment requires no formal instruments; rather, it is achieved by observing what students are doing and saying in order to monitor what and how well they are understanding (or misunderstanding); this enables appropriate adjustments to be made to the task conditions in the moment as well as decisions to be made about whether or not to intervene when individuals or groups encounter difficulties and, if so, the best way to do so (Drummond 1997). As far as maximizing children's progress is concerned, this kind of formative assessment is much more useful than summative assessment.

Figure 2. The Roles of the Teacher



At the Managerial level, some form of summative assessment is also important in order to find out whether the learning opportunities that were planned and put into effect in collaboration with the students were effective in achieving the intended outcomes. However, what was planned is rarely enacted as originally anticipated just because the enactment is a joint process that is affected by all manner of factors, and particularly by the students' uptake of the opportunities made available and by their contributions to ongoing activities. In this sense, the curriculum is always emerging from moment to moment and is inevitably experienced differently by individual participants. For this reason, summative assessment should not be thought of as an evaluation of the students alone; the teacher's part in keeping the ship afloat and attempting to navigate it should also be evaluated. The students should also be involved in the summative evaluation of what was helpful to them and what was not.

Finally, at least for some subject areas, an annual assessment is often mandated by the state. This is, of course, a justifiable instrument of accountability – at least in principle. However, as such tests take no account of the differences between schools and classrooms in terms of their demographic makeup, their level of funding, or, most importantly, what topics and issues have actually been studied and to what depth, the results should not be used to evaluate students or teachers against each other. Furthermore, because such tests frequently make use of multiple choice items that have just one correct answer, they can only test knowledge of 'factual' material since they give

students no opportunity to provide justifications for the answers that they select. The results of these tests thus provide little information to the teacher as to how they might be more effective in enabling students to gain a deeper understanding of the topics that are selected for testing.[7]

Teachers as Researchers

There is one further role that teachers are increasingly taking on, and that is the role of 'teacher researcher'. When teachers are already reflective about their own classroom practice, there are several excellent reasons for taking this additional step. First, if they systematically document the two kinds of assessment discussed above, they already have useful data for answering a variety of questions about the degree of match between their intentions and their practice. It is then worthwhile, having reflected on the results of this first level of investigation, to decide on what changes they wish to make and to collect further evidence to investigate the success of their attempts. This process can be even more illuminating and rewarding if a group of teachers work together, as the DICEP group did, to share their findings and their ideas for further improvement. Not only do members provide mutual support and encouragement but, when they tackle a common issue, their findings are likely to carry more weight and be more useful to other teachers. And when they embark on preparing to present their work at conferences and to publish it for other teachers, the opportunity for collaborative knowledge building that the group provides is a further benefit (Wells 2001).

But there is a further reason to become a teacher researcher and that is both to experience first hand and to model for students the same processes of inquiry that, it has been suggested, should be central to the way in which they organize their students' learning. As the DICEP teachers found, it is a natural next step to include the students as co-investigators about the work they are doing together (see *Networks 6(1)* for accounts of their joint projects).[8]

Conclusion

In opening this chapter, I rejected the notion that human beings live their lives as solitary individuals surrounded and influenced by a 'social context.' To the contrary, I have argued that all of us live our lives in constant interaction with others – family members close to us, friends, neighbors, workmates and even casual acquaintances – in which the outcomes of our jointly undertaken activities bring about our mutual transformation as well as transformations of our shared environment. Infancy and childhood are the periods of most rapid and consequential transformation, as it is during these periods that the individual is apprenticed into the local culture, its historically developed ways of acting, thinking and valuing, and forms the dispositions that will strongly influence how she or he will take up opportunities for further development throughout his or her life.

Understood in this way, the parts played by the significant others – parents, caregivers, teachers – in the child's early life are key to his or her future and, less directly, to that of all the other people with whom he or she will interact. How they engage with the child in the activities they undertake together not only facilitates – or impedes – his or her active and interested participation but also models what activities are worth undertaking and how they should be approached. In particular, the ways in which they talk about what they are doing together enables the young child both to appropriate the resources of the spoken language and also, in the process, to take over the cultural knowledge that is encoded in that language.

Cultures and families differ in the ways in which they make sense of experience and in their images of the ideal course and endpoint of development and these differences affect the ways in which parents interact with their children. Clearly, the resulting differences in children's early experiences must be taken into account by those who plan and organize the learning experiences that are made available in daycare and school settings. But in the increasingly global environment in which all cultures are now involved, there is a need for all children to develop the dispositions and knowledgeable skills to become resilient, adaptable and resourceful learners, who are able to be interdependent as well as independent agents, to take the lead as well as to follow, and selectively to draw upon and

extend the knowledge that they inherit from previous generations in order to contribute to solving the problems that they will undoubtedly encounter in their lives beyond school.

The best way to assist children in their development, I have suggested, is by approaching learning and teaching through dialogic inquiry, in which spoken and written language, together with action and reflection, provide the principal mediational means. Since the appropriate themes and the manner in which they are approached will need to be different for children of different ages and with different previous experiences, there can be no single blueprint that will be universally applicable. It is for this reason that I have recommended that teachers, too, engage in dialogic inquiry with their colleagues to create and improve learning opportunities that are most appropriate for the children in their care.

Almost a century ago, Dewey put forward similar arguments in *Democracy and Education*.

> In directing the activities of the young, society determines its own future ... Since the young at a given time will at some later date compose the society of that period, the latter's nature will largely turn upon the direction children's activities were given at an earlier period. (Dewey 1966)

In the intervening years, the world has changed in ways that make the future for today's children more uncertain and more challenging than it was when Dewey wrote those words. It is therefore all the more important that the activities we design for their education are such as to enable them to meet those challenges with relevant knowledge and the disposition to use it in collaboration with others with a concern for the interests of others as well as themselves and for the wellbeing of the planet on which we all live.

References

Barnes, D. (1976). From communication to curriculum. Harmondsworth, UK, Penguin.

Barnes, S., M. Gutfreund, et al. (1983). "Characteristics of adult speech which predict children's language development." Journal of Child Language **10**.

Bernstein, B. (1971). Class, codes and control Vol.I: Theoretical studies towards a sociology of language. London, Routledge & Kegan Paul.

Bernstein, B. (1975). Class, codes and control, Vol. 3: Towards a theory of educational transmissions. London, Routledge & Kegan Paul.

Bloom, L. (1993). The transition from infancy to language. Cambridge, Cambridge University Press.

Brown, A. L. and J. C. Campione (1994). Guided discovery in a community of learners. Integrating cognitive theory and classroom practice: Classroom lessons. K. McGilly. Cambridge, MA, MIT Press/Bradford Books.**:** 229-270.

Brown, R. (1973). A first language; the early stages. London, G. Allen and Unwin.

Bruner, J. S. (1983). Child's Talk. New York, Norton.

Bruner, J. S. (1996). Celebrating divergence: Piaget and Vygotsky. Geneva. Second Conference for Sociocultural Research and 'The Growing Mind'. 15 September, 1996.

Bruner, J. S. (1996). The culture of education. Cambridge, MA, Harvard University Press.

Cazden, C. (1988). Classroom discourse: The language of teaching and learning. Portsmouth, NH, Heinemann.

Chomsky, N. A. (1965). Aspects of the theory of syntax. Cambridge, MA, MIT Press.

Clay, M. (2005). Literacy lessons: Designed for individuals, Part One: Why? when? and how? Portsmouth NH, Heinemann.

Clay, M. (2005). Literacy lessons: Designed for individuals, Part two: Teaching procedures. Portsmouth, NH, Heinemann.

Clay, M. M. (1983). Getting a theory of writing. Explorations in the development of writing. B. M. Kroll and G. Wells. Chichester, UK, Wiley.

Cochran-Smith, M. and S. L. Lytle (1999). "The teacher research movement: A decade later." Educational Researcher **28**(7): 15-25.

Cohen, D. K., M. W. McLaughlin, et al., Eds. (1993). Teaching for understanding: Challenges for policy and practice. San Francisco, Jossey-Bass.

Cross, T. G. (1977). Mothers. speech adjustments: the contribution of selecterd child listener variables. Talking to children:Language input and acquisition. C. E. Snow and C. Ferguson. Cambridge, Cambridge University Press.

Daniels, H., Ed. (1996). An introduction to Vygotsky. London, Routledge.

DeBruin-Parecki, A. (1999). Assessing Adult/Child Storybook Reading Practices

. CIERA Reports. MI: Ann Arbor, Center for the Improvement of Early Reading Achievement
University of Michigan School of Education.

Dewey, J. (1966). Democracy and education. New York, The Free Press.

Diamond, J. (1992). The third chimpanzee. New York, Harper Collins.

Diamond, J. (1998). Guns, germs, and steel: The fates of human societies. New York, Norton.

Donoahue, Z., M. A. Van Tassell, et al., Eds. (1996). Research in the classroom: Talk, text and inquiry. Newark, DE, International Reading.

Drummond, M. J. (1997). Learning to see, Stenhouse Publishers.

Dyson, A. H. (1993). Social worlds of children learning to write in an urban school. New York, Teachers College Press.

Edwards, A. D. and D. Westgate (1994). Investigating classroom talk. London, Falmer Press.

Engeström, Y. (1987). Learning by expanding: An activity-theoretical approach to developmental research. Helsinki, Orienta-Konsultit.

Franklin, U. (1996). Introduction. Towards an Ecology of Knowledge. University of Toronto.

Gallas, K. (1995). Talking their way into science: Hearing children's questions and theories, responding with curricula. New York, Teachers College Press.

Galton, M., L. Hargreaves, et al. (1999). Inside the primary classroom: 20 years on. London, Routledge.

Gamberg, R., W. Kwak, et al. (1988). Learning and loving it: Theme studies in the classroom. Toronto: OISE Press, Portsmouth, NH: Heinemann.

Hall, N. (1987). The emergence of literacy. Portsmouth, NH, Heinemann Educational Books.

Halliday, M. A. K. (1975). Learning how to mean. London, Arnold.

Halliday, M. A. K. (1993). "Towards a language-based theory of learning." Linguistics and Education **5**: 93-116.

Harste, J. (1994). Literacy as curricular conversations about knowledge, inquiry and morality. Theoretical models and processes of reading. M. R. Ruddell and R. B. Ruddell. Newark, DE International Reading Association.

Hart, B. and T. R. Risley (1999). The social world of children learning to talk. Baltimore, Paul H. Brookes.

Hasan, R. (1986). The ontogenesis of ideology: An interpretation of mother-child talk. Language, semiotics and ideology. T. Threadgold, E. A. Gros, G. Kress and M. A. K. Halliday. Sydney, Sydney Association for Studies in Society and Culture**:** 125-146.

Hasan, R. (2002). Semiotic mediation and mental development in pluralistic societies: Some implications for tomorrow's schooling. Learning for life in the 21st century: Sociocultural perspectives on the future of education. G. Wells and G. Claxton. Oxford, Blackwell**:** 112-126.

Heath, S. B. (1983). Ways with words. Cambridge, Cambridge University Press.

Hicks, D. (1995). "Discourse, learning, and teaching." Review of Research in Education **21**: 49-95.

Immordino-Yang, M. H. and A. Damasio (2007). "We feel, therefore we learn: The relevance of affective and social neuroscience to education." Mind, Brain, and Education **1**(1): 3-10.

John-Steiner, V. and P. Tatter (1983). An interactionist model of language development. The sociogenesis of language and human conduct. B. Bain. New York, Plenum Press.

Maybin, J., N. Mercer, et al. (1992). 'Scaffolding' learning in the classroom. Thinking voices: The work of the National Oracy Project. K. Norman. London, Hodder & Stoughton**:** 186-195.

Mercer, N. (1995). The guided construction of knowledge. Clevedon UK, Multilingual Matters.

Mercer, N. (2002). Developing dialogues. Learning for life in the 21st century: Sociocultural perdspectives on the future of education. G. Wells and G. Claxton. Oxford, Blackwell**:** 141-153.

Michaels, S. (1981). ""Sharing time": Children's narrative styles and differential access to literacy." Language in Society **10**: 423-442.

Nelson, K. (1996). Language in cognitive development: The emergence of the mediated mind. New York, Cambridge University Press.

Nystrand, M. (1997). Opening dialogue: Understanding the dynamics of language and learning in the English classroom. New York, Teacher College Press.

Pinker, S. (1994). The language instinct: How the mind creates language. New York, HarperCollins.

Polacco, P. (1992). Mrs Katz and Tush. New York Random House Bantam Books.

Pressley, M. (2001). Effective beginning reading instruction. Chicago, IL: National Reading Conference.

Rogoff, B. (2003). The cultural nature of human development. New York, Oxford University Press.

Schieffelin, B. B. and E. Ochs, Eds. (1986). Language socialization across cultures. Cambridge, Cambridge University Press.

Service, R. and T. I. Harrison (2006). The cremation of Sam McGee. Tonawanda, NY, Kids Can Press.

Taylor, D. (1998). Familyl literacy: Young children learning to read and write. NH: Portsmouth, Heinemann.

Teale, W. H. and E. Sulzby, Eds. (1986). Emergent literacy: Writing and reading

. Norwood, N.J., Ablex.

Tharp, R. and R. Gallimore (1988). Rousing minds to life. New York, Cambridge University Press.

Tizard, B. and M. Hughes (1984). Young children learning: Talking and thinking at home and at school. London, Fontana.

Trevarthen, C. (1979). Communication and cooperation in early infancy: a description of primary intersubjectivity. Before speech: The beginning of interpersonal communication. M. Bullowa. Cambridge, Cambridge University Press.

Van Tassell, M. A. and B. Galbraith (1998). Seeds and webs, OISE/University of Toronto.

Vygotsky, L. S. (1978). Mind in society: The development of higher psychological processes. Cambridge, MA, Harvard University Press.

Vygotsky, L. S. (1981). The genesis of higher mental functions. The concept of activity in Soviet Psychology. J. V. Wertsch. Armonk, NY, Sharpe**:** 144-188.

Vygotsky, L. S. (1987). Thinking and speech. The collected works of L.S. Vygotsky, Volume 1: Problems of general psychology. R. W. Rieber and A. S. Carton. New York, Plenum**:** 39-285.

Wells, G. (1985). Language development in the pre-school years. Cambridge, Cambridge University Press.

Wells, G. (1986). The meaning makers: Children learning language and using language to learn. Portsmouth, NH, Heinemann.

Wells, G. (1999). Dialogic inquiry: Towards a sociocultural practice and theory of education. Cambridge, Cambridge University Press.

Wells, G., Ed. (2001). Action, talk, and text: Learning and teaching through inquiry. New York, Teachers College Press.

Wells, G. (2001). The case for dialogic inquiry. Action, talk, and text: Learning and teaching through inquiry. G. Wells. New York, Teachers College press**:** 171-194.

Wells, G. (2002). Learning and teaching for understanding: The key role of collaborative knowledge building. Social constructivist teaching: Affordances and constraints. J. Brophy. Oxford, Elsevier/JAI**:** 1-41.

Wells, G. and G. L. Chang-Wells (1992). Constructing knowledge together: Classrooms as centers of inquiry and literacy. Portsmouth, NH, Heinemann Educational Books.

Wells, G. and G. Claxton, Eds. (2002). Learning for life in the 21st century: Sociocultural perspectives on the future of education. Oxford, Blackwell.

Wells, J. and L. Hart-Hewins (1990). Real books for reading: Learning to read with children's literature Portsmouth, NH, Heinemann.

Wertsch, J. V. (2000). Vygotsky's two minds on the nature of meaning Vygotskian perspectives on literacy research. C. Lee and P. Smagorinsky. New York, Cambridge University Press.

Wood, D., L. McMahon, et al. (1980). Working with under fives. London, Grant McIntyre.

Notes

[1] In this and all the following extracts, the following transcription conventions apply: [ ] enclose interpretations and contextual information; < > enclose segments where the transcription is in doubt; * indicates an unintelligible word; CAPS indicate a segment spoken with emphasis; underline indicates segments spoken simultaneously; **.** a period marks approximately one second of pause.

[2] This finding is supported by many studies conducted in Western societies. In less technologically developed societies, on the other hand, parents are often too involved in adult work to have time to talk with their children, nor do they consider such interaction to be important for their children's development. In these societies, child-rearing is largely the responsibility of older siblings (Rogoff, 2003; (Schieffelin and Ochs 1986; Rogoff 2003)[3] In the Bristol Study, we compared all 128 children at the age of three-and-

a-half years. While some were already functioning in advance of the average five-year-old, others were still at the average level of a two-year-old. Nevertheless, by five, all of them had mastered the basic grammar of English and had a vocabulary of several thousand words (Wells, 1986, chapter 5).

[4] The following are also useful contemporary interpretations of Vygotsky's work: (Daniels 1996; Wells and Claxton 2002; Rogoff 2003)

[5] It is worth pointing out that, when the relationship between children's scores on a scale of language development were correlated with their scores on a scale of family background, the relationship was found to be statistically non-significant. The sample for this comparison included all 128 children in the Bristol Sudy, who had been selected to be representative of the total preschool population of the city. While the extremely high and extremely low scorers on the language scale (12 in total) were found to be from the high and low ends, respectively, on the family background scale, the distribution of the remaining116 children showed no evidence of a relationship between the two variables (Wells, 1986).

[6] For a fuller account of this inquiry unit, see Wells and Chang-Wells (1992)

[7] Despite the arguments against treating state mandated tests as providing useful feedback on the quality of the learning and teaching that is taking place in particular classrooms, teachers may nevertheless want to ensure that their students perform as well as possible on these tests. In this case, it may be useful to spend time helping them to become 'test wise 'by teaching helpful strategies that they may use to achieve the best performance they can.

[8] Several collections of teacher researchers' work have now been published (e.g. Donoahue, Van Tassell et al. 1996) and suggestions for setting up a group can be found in Cochran-Smith and Lytle (1999).