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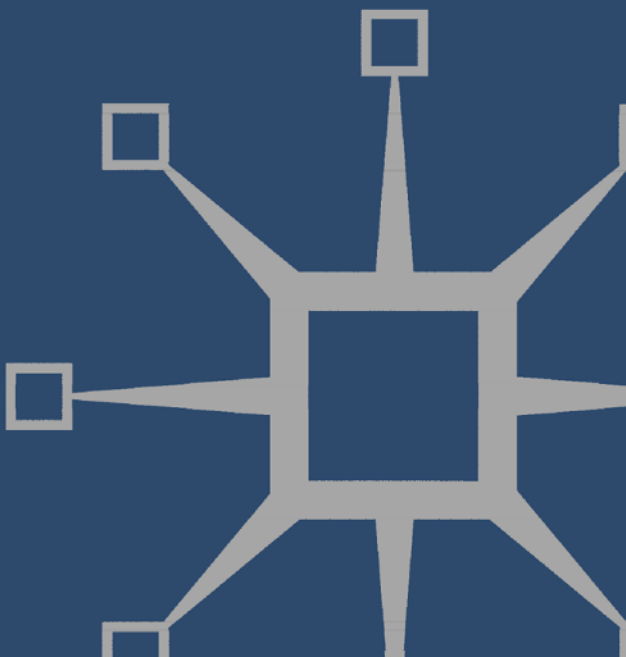
Children Learning Second Languages

Annamaria Pinter



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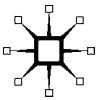

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TO MY WONDERFUL SISTER, ZSUZSA, WITH LOVE FOREVER

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General Editors' Preface

Research and Practice in Applied Linguistics is an international book series from Palgrave Macmillan which brings together leading researchers and teachers in Applied Linguistics to provide readers with the knowledge and tools they need to undertake their own practice-related research. Books in the series are designed for students and researchers in Applied Linguistics, TESOL, Language Education and related subject areas, and for language professionals keen to extend their research experience.

Every book in this innovative series is designed to be user-friendly, with clear illustrations and accessible style. The quotations and definitions of key concepts that punctuate the main text are intended to ensure that many, often competing, voices are heard. Each book presents a concise historical and conceptual overview of its chosen field, identifying many lines of enquiry and findings, but also gaps and disagreements. It provides readers with an overall framework for further examination of how research and practice inform each other, and how practitioners can develop their own problem-based research.

The focus throughout is on exploring the relationship between research and practice in Applied Linguistics. How far can research provide answers to the questions and issues that arise in practice? Can research questions that arise and are examined in very specific circumstances be informed by, and inform, the global body of research and practice? What different kinds of information can be obtained from different research methodologies? How should we make a selection between the options available, and how far are different methods compatible with each other? How can the results of research be turned into practical action?

The books in this series identify some of the key researchable areas in the field and provide workable examples of research projects, backed up by details of appropriate research tools and resources. Case studies and exemplars of research and practice are drawn on throughout the books. References to key institutions, individual research lists, journals and professional organizations provide starting points for gathering information and embarking on research. The books also include annotated lists of key works in the field for further study.

The overall objective of the series is to illustrate the message that in Applied Linguistics there can be no good professional practice that isn't based on good research, and there can be no good research that isn't informed by practice.

Christopher N. Candlin and David R. Hall
Macquarie University, Sydney

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Introduction

1 Why focus on children's second language learning?

Language learning in childhood is both similar and different from adult language learning. It is therefore important for language teachers who work with children to explore these similarities and differences so that they can make their work in the classroom as effective as possible.

The particular overview offered in this book is both timely and necessary, as the number of second and foreign language programmes (in particular English language programmes) for children is increasing at a very high rate globally. Governments all over the world are introducing English language programmes earlier in their education systems, typically during the primary school or preschool years. In addition to a general trend of introducing English, in many contexts of the world children already learn other second languages such as local official languages, majority second languages and/or heritage languages. The aim of this volume is to illustrate the variety of contexts where languages are learnt in childhood, to discuss links between existing research on child second language learning and classroom practice, and to enable practitioners to carry out their own locally based research.

Concept 1 Language acquisition and learning

. . we *acquire* as we are exposed to samples of the second language which we understand. This happens in much the same way that children pick up their first language – with no conscious attention to language form. We *learn*, on the other hand, via a conscious process of study and attention to form and rule learning.

Lightbown and Spada (1999: 38)

While the two terms denote two clearly different processes, for individual language learners there is typically some overlap between natural acquisition

and instructed learning. In this book these two concepts will be used to denote these two tendencies where appropriate, but on the whole, where the distinction is not emphasised the terms will be used interchangeably.

2 What age range will be covered?

It is hard to fit 'childhood' into fixed age brackets. There are many different cultural interpretations of 'children' in different societies. Such cultural variation is further influenced by the type of definition we might be looking for. For example, legal and political definitions of a child refer to individuals who are not yet eligible to vote, drive, drink alcohol or get married. These are very different from biological definitions, or educational definitions. In this volume a broad educational definition will be used, focussing on children of preschool and primary or elementary school ages.

Even within this educational definition there is a tremendous variation from country to country, as will become evident in the studies in upcoming chapters. Typically, children start preschool at around the age of 3 and then they move to primary/elementary school at around the age of 5–7. Accordingly, some discussion will refer to the 'preschool years' and some to the so-called 'middle childhood' that covers the primary school years. Children may leave their primary school at around the age of 11 or 12, although in some countries this may happen later, at the age of 13–14. From age 13 years onwards children will be referred to as 'early adolescents'. Most of the discussion in this volume will be focussed on preschool and primary school years as well as on early adolescence, but occasionally, for example when comparisons of different age groups are discussed in particular studies (such as comparing 10-, 12- and 16-year-olds), it will be necessary and meaningful to report on learners who might be either younger than 3 years of age or older than 13 years of age. The three age groups are represented in table 1.

Table 1 Children: the three age groups

Education	**Age**	**Capacities**
Preschool	3–5	No formal learning experiences No literacy skills Large differences among children with regard to readiness for school
Primary school years	6–12	Primary/elementary schooling Often divided into lower primary and upper primary years
Early adolescence	13 onwards	Change of schooling to secondary or high school at around 11 or 12, but in some countries not until 14

The variation in school types and ages at which elementary education becomes compulsory shows a complex picture across different countries. This picture is further complicated by the fact that in research studies children are often described by referring to their grade level as opposed to their actual age. In the UK, for example, children start school at between 4 and 5 years of age, whereas in many other countries they start school much later, at 6–7 years of age. For the sake of consistency, wherever possible, children's chronological ages will be indicated in addition to their grade levels.

3 What is the scope of this book on child second/third language learning?

The general aims of the volume are:

- to offer a review of child development and language learning
- to tease out differences and similarities between adult and child language learning processes
- to illustrate what language learning entails for different children in different contexts around the world
- to relate the existing research in child second language learning (in different contexts and different areas of learning) to practice in classrooms and identify gaps and issues for future research
- to consider ethical and methodological challenges in research with children
- to offer a range of feasible topics for practitioners to research within child second language learning and teaching
- to offer a comprehensive list of resources.

To write a book on the topic of child second/third language learning, considering the range of different languages, age groups, learning contexts and research approaches that might be involved, is an impossible task. This is an enormously large and complex area and therefore it is not practical or feasible to cover all the research and practice in a comprehensive way. Instead, this volume gives a bird's eye view of some current research and debate. I hope that researchers, students and teachers, wherever they work and whatever their circumstances are, can find some useful ideas or inspiration to explore some topics further, while developing their own research interests.

Part I

Background to Child Second Language Acquisition and Pedagogy

1
Theories of Child Development

This chapter will

- consider three influential theories of cognitive development, i.e. those associated with Piaget,Vygotsky, and information processing, and some issues related to emotional development
- discuss the characteristics of different age groups
- consider links between cognitive development and second language learning/teaching

1.1 Introduction

This first background chapter is concerned with child development theories. As a language teacher working with children, you will find that basic understanding of the cognitive, social and emotional development of different age groups will be helpful in teaching, and in planning, implementing and interpreting research. Second language learning in schools or in less formal environments should not be seen as an isolated process but instead as closely intertwined with cognitive development, learning about the world and developing as a person.

Child development theories are interested in exploring the following questions. How do children mature as they get older? How do they think and learn differently from adults? To what extent is it nature that is responsible for these developments and what is the role of the nurturing environment?

Some theories are based on the premise that there are stages in development and that each stage is qualitatively different, while others maintain that development is more continuous. In terms of exploring the main forces behind development, some theories are more cognitive in orientation, while others are more social. The three main theories explored here are: (1) Piaget's stage-like theory of child development; (2) Vygotsky's socially mediated development; and (3) a more general approach, i.e. the

information processing approach to child development. Some basic insights related to children's emotional development will also be reviewed.

1.2 Piaget's theory of child development

Jean Piaget (1896–1980) was a famous Swiss child psychologist who offered a systematic approach to the study of children's thinking and development from birth to adulthood. His name is associated with the 'stage theory' which has been extremely influential in educational circles throughout the twentieth century and remains relevant and popular today.

Piaget's theory grew out of careful observations of his own children and his interest in identifying aspects of child development that might be universal. This explains his interest in identifying stages in development. Piaget defined intelligence as a basic life function that helps organisms to adapt to their environment. During this process of gradual adaptation, children attempt to achieve a kind of balance or 'equilibrium' between themselves and their environment. Piaget observed that his own children were constantly exploring their environment and learning came naturally to them. They were curious explorers who were constructing knowledge through their own actions.

Concept 1.1 Piaget's organisation, adaptation, assimilation and accommodation

When interacting with the environment, children create mental structures or schemes (Piaget and Inhelder 1956). These schemes are being created all the time and they are also combined to make ever more complex schemes. This is the process of *organisation*. At the same time, children need to compare and adjust their developing schemes to match what they encounter in their environment. This process of adjusting is referred to as *adaptation*. Adaptation actually consists of two sub-processes: *assimilation* and *accommodation*. The first process refers to interpreting new knowledge in terms of old models/ schemes they already possess, and the second process refers to modifying these existing structures to fit the new knowledge. These processes work together to further cognitive growth.

How do these concepts actually translate into practice? Imagine a young child who already knows that creatures that live in water are fish, they have gills and their skin is covered by scales. This mental structure seems to fit well with what this child experiences in his environment (equilibrium) as he cares for his pet goldfish. One day however, the child will come across a book about whales, and realise that not all creatures that live in water are fish. Whales breathe air and they don't have gills or scales. At this point

the child will have to reorganise the original mental structure for 'creatures that live in water' by adjusting it to accommodate the new information. With more and more experience of interacting with the environment over the years, the child can achieve more integrated and more differentiated levels of equilibrium. This will lead to a more and more sophisticated way of organising information.

1.2.1 Piaget's stages of development

Piaget argues that all children follow the same stages of development in the exact same order, hence he refers to these as 'invariant stages of development'. Within each stage the quality of thinking is relatively consistent across different tasks. A child's performance on one Piagetian task for a given stage will predict the performance on a range of other tasks for that same level. The stages of development are given in table 2.

Table 2 Piagetian stages of development

Stage 1 0–2 years: sensori-motor stage
Repetitive motor habits (e.g. kicking)
Goal-oriented behaviour (e.g. reaching out to grab)
Active curiosity (e.g. trying to put a block inside another one)
Imitation (e.g. actions of adult, accompanying a jointly recited nursery rhyme)
Object permanence (e.g. looking for an object where it was last seen)
Stage 2 2–7 years: pre-operational stage
Animism (attributing lifelike qualities to inanimate things, such as teddy bears)
Egocentrism (seeing the world from one's own point of view without appreciating others')
Centration (attending to one aspect of a task only)
At age 7: intellectual revolution (Wood 1998: 23)
Stage 3 7–11: concrete operational stage
Operational thought (ability to think in a logical fashion)
Using analogy competently (If A is smaller than B and C is smaller than B, then . . .)
Full emergence of symbolic thought (e.g. an ability to make one thing stand for another, i.e. a map for a town)
Reversibility and conservation (e.g. mentally undo/change back an action)
Appreciating causality (reasoning from particular to particular)
Development of hierarchical classification (e.g. putting furniture and chair together rather than chair and breakfast)

Table 2 (Continued)

De-centration (ability to deal with more than one aspect of a task)
A gradual loss of/decline in egocenticity
Relational logic (mentally order a set of stimuli along a dimension)
Stage 4 11–12 and beyond: formal operational stage
Formal operational thought (ability to carry out mental actions on ideas and propositions without the need to rely on concrete objects)
Hypothetico-deductive reasoning (ability to reason by progressing from general ideas to specific ones by generating possibilities and hypotheses)
Thinking like a scientist (hypotheses are systematically tested in experiments, if-then statements)
Rational, systematic and abstract thinking

Our interest with preschool and primary school aged children leads us to focus first of all on the pre-operational stage. According to Piaget, the beginning of this stage is marked around the age of 2 and lasts until around the age of 7. During this stage children begin to use language and imagery as meaning-making systems and make huge progress in their intellectual development; but interestingly, Piaget describes this stage by largely focussing on deficiencies rather than achievements. When children in the pre-operational and operational stages were given the same tests and tasks, typically children under 7 were unable to do them, whereas those over 7 years of age were able to do them. In fact these two stages are best understood as divided by an 'intellectual revolution' (Wood 1998: 23) that, it is claimed, happens at around the age of 7.

Pre-operational children (2–7 years of age) do not yet follow the rules of 'formal logic'. Piaget characterised these children as 'ego-centric', i.e. unable to imagine any other perspectives but their own. One of the most well-known empirical studies conducted by Piaget and his associates to illustrate this point was the 'Three mountain experiment'. In this experiment a doll was placed facing a model of a mountain which had some snow on its top. The next mountain beyond the snowy one had a church on its top and beyond that the third mountain had a house. The children were asked to stand facing the third mountain, the one which had the house, i.e. directly opposite to where the doll was. Then they were asked what the *doll* could see. Children under the age of 7 tended to describe their own view rather than the doll's view, and they consistently responded that the doll could see the mountain with the house.

Another example to illustrate young children's failure to appreciate formal logic is their lack of ability to 'conserve', i.e. their inability to realise that the characteristics of an object will remain the same even if their outward appearance changes. For example, in experiments when water or sand is poured from a long narrow glass into a short wide glass, most pre-operational

children say that the amount of the water or sand changed, as perceptually the level is higher in the first container, which is the taller and narrower one.

Similar findings were gathered in a range of different tasks (e.g. classification tasks, hierarchy tasks, see table 2) which all showed that young children can focus only on one aspect of the task at a time and they ignore all other aspects.

Quote 1.1 On pre-operational thought

Lacking operational thought means that . . . flexible, reversible reasoning which allows them to conserve, classify, seriate, coordinate perspectives and overcome misleading perceptual impressions' is not available yet.

(Meadows 1993: 24)

Overall, Piaget's assessment of young children under 7 is rather negative, as he describes them in terms of what they lack. The tasks that Piaget and his team used were all tasks that aimed to test formal logic. While it is true that young children are less able to do well on formal experimental tasks, children between the ages of 2 and 7 make important progress in their development. For example, they enjoy and participate effectively in repetitive games where the same scenario is acted out over and over again. 'Make believe' play, which over time becomes more complex, develops into socio-dramatic play (e.g. 'let's pretend we are mum and dad and we live with our 40 children in a double-decker bus'). Frequent engagement in different kinds of play situations contributes to cognitive, social and emotional development where children learn about feelings and points of view of others in meaningful and naturally occurring contexts. During play activities they participate in different culturally and contextually appropriate linguistic routines.

If you teach very young children, you may want to be reminded of their difficulties in coping with formal logic in de-contextualised situations. They cannot understand complicated instructions and they cannot work with tasks that require coordinating perspectives, evaluating options or reasoning in a formal manner. They enjoy spontaneous language play (Nicholas and Lightbown 2008) and simple, repetitive tasks, games and stories. Games and drama activities can stimulate these children's creative imagination and willingness to take on playful roles.

Following the so-called intellectual revolution at around the age of 7 (Wood 1998: 23), the beginning of the third stage marks the start of the most fundamental cognitive change, according to Piaget: the development of 'concrete operations'. While administering the experimental tasks to children, Piaget and his colleagues noticed that the majority of children who were older than 7 typically completed their tasks successfully. Children older than 7 years of age appreciate that pouring water from one container to

another does not change the quantity of the water, because even though one glass is taller, the other is wider and these two characteristics compensate for each other. These children also appreciate that there may be more than one angle/perspective to a question or a task. They become competent at organising and sorting objects into hierarchical structures and they recognise that the same set of objects can be looked at and categorised in more than one way. Children's seriation also improves, which means that putting numbers of objects physically or mentally in a list according to their height or weight, progressing from smallest to biggest, is no longer a problem. They can work out puzzles of simple analogy such as 'if A is bigger than B and B is bigger than C, then A is also bigger than C (Chapman and Lindenberger 1988). Another area of development is spatial awareness. Understanding of distance, maps and directions improves. For example, at the age of 10 children can give clear, well-organised directions (Gauvain and Rogoff 1989).

A clear implication of these achievements in middle childhood for language teachers is that it becomes possible to use a greater variety of tasks and activities. For example, children can compare pictures and maps and sort different words into different categories. They can also use analogy to work out linguistic puzzles. A growing ability to appreciate other points of view allows teachers to include pair and group work, because children become more attentive while listening to one another and working collaboratively on tasks.

These are major strides in development but the concrete operational child still suffers from some limitations, according to Piaget. While children between the ages of 7 and 12 can use the rules of formal logic (as measured by the experimental tasks), they can only do so if the questions and problems are applied to concrete examples and objects in real life. Children overcome this limitation during the next stage of development, i.e. when they enter the formal operational stage. During this stage, children develop 'propositional thought' which enables them to become competent at discussing and evaluating problems without referring to the real world. Children at the formal operational development stage enjoy generating creative ideas and hypothetical propositions, i.e. they become interested in the 'what if' type of problems.

Example study 1.1 Shaffer (1973): Differences between concrete operational and formal operational thought

A study by Shaffer (1973) compared concrete operational and formal operational children's responses to the same task. The task invited the children to imagine how humans might benefit from a third eye and they were asked to draw some innovative solutions. Most younger children (9-year-olds in the concrete operational stage) drew a third eye in the middle of the forehead, between the two eyes

and did not think of extra functions for it. Older children (13-year-olds, in the formal operational stage) were more creative, suggesting interesting new functions for the third eye, such as hiding it behind the hair at the back of your head, so that you can see things behind your back. Formal operational children were much more adept at generating more abstract and hypothetical solutions than were the younger children.

According to Piaget, the formal operational stage is the ultimate achievement of the human mind, which is characterised by hypothetico-deductive reasoning. Access to this type of reasoning enables adolescents to take an abstract/ hypothetical problem and carefully consider all possible factors that might affect the outcome. By considering all options in an orderly manner, the adolescent mind can propose hypotheses regarding what is most likely to happen, based on eliminating less likely scenarios one by one. One well-known experiment to illustrate formal operational thinking is the 'pendulum problem' (see Miller 1989). In this experiment the researchers asked children what factors they thought might affect the way the pendulum oscillated. By considering the strings of the pendulum of different lengths and the objects of different weights at the end of the strings, formal operators , i.e. children who had reached the formal operational development stage, discovered that it was only the length of the string that mattered. Younger children typically failed to test all options and came to a premature conclusion. Adolescents can take a systematic approach to this type of problem by holding all factors constant while testing just one factor at a time. Armed with an ability to think in abstract terms about hypothetical matters, adolescents are increasingly able to make decisions about complex problems by weighing up different alternatives. They also become adept at imagining creative alternative realities as opposed to what is given. This makes them question rules and procedures and ultimately adult authority.

If you are a teacher working with adolescents, the implications are that you can use more sophisticated tasks such as debates, role plays and various activities that involve evaluating different opinions. These learners can also appreciate linguistic challenges such as translation, or text analysis. Learners at this age are able to evaluate their own and their peers' progress in learning and they may be able to negotiate learning content with teachers.

1.2.2 Criticism of Piaget

Piaget's original stage theory has been scrutinised and criticised by many. In particular, two of his stages were criticised most: the pre-operational and the formal operational stages. It is widely accepted now that his claims about pre-operational children were too harsh and that he underestimated young children's mental capacities, whereas with regard to the formal operational stage, he somewhat overestimated young adolescents. (e.g. Donaldson 1978).

Since Piaget's original experiments, research on pre-operational thought has revealed that cultural practices influence the development of operational thinking significantly. Children from different cultures develop operational thought at different ages. In addition, in order to do well on the Piagetian tasks, children must take part in everyday activities which promote this kind of thinking and raise these kinds of problems of logic (e.g. Light and Perrett-Clermont 1989). Formal schooling itself facilitates the development of operational thought. Children's specific experiences and their unique motivations can also affect the emergence of operational thought (Ceci and Roazzi 1994).

So, what was so problematic with the Piagetian experiments for pre-operational children? Donaldson (1978) proposed that the language of the experiments was unnatural and difficult to understand. Some of the questions used in the experimental tasks were ambiguous and confusing. For example, in one of the task which tested children's ability to identify categories of beads, the experimenter typically asked: 'Are there more brown beads or more wooden beads?' Donaldson argues that questions like this sound strange, unnatural and they are never heard in normal everyday conversations. Children, therefore, may have been confused about the interpretation of the questions rather than the task demand *per se*. When McGarrigle and Donaldson (1974) replicated one of the inclusion tasks with changes to the actual wording of the original questions, the results showed that the majority of the children were able to give the correct answer.

The context of the experiments was also problematic. For example, when the experimenter indicates the change by introducing a new container or rearranges the sticks in the conversion tasks, it is quite logical for the child to think that there is some link between the action (changing the display) and the experimenter's next question. A question asked without any change for a second time in everyday situations often carries the implication that the first answer was wrong or inadequate. It may have been this breakdown in mutual understanding between the experimenter adult and the child that contributed to these failures, rather than young children's complete lack of logic. This issue, namely, the potential lack of understanding between the child and an adult outsider/experimenter, can be problematic in all types of laboratory research contexts where the tasks are different from real-life experiences and events.

Overall, we can conclude that pre-operational children may be able to think in logical ways but only if the tasks are made meaningful and the instructions are clear and unambiguous. Donaldson also points out that 'egocentrism' associated with the pre-operational stage is not just a young child-specific phenomenon. It is more a 'mode of thinking'. When we are familiar with the context, fully understand the task and have sufficient experience, we are more likely to demonstrate 'non-egocentric' ways of thinking, as opposed to situations where the task is not clear and the context is confusing.

Quote 1.2 On 'ego-centrism'

What is being claimed here is that we are all ego-centric through the whole of our lives in some situations and very well able to decentre in others. Piaget would not disagree with the claim that ego-centrism is never wholly overcome. The dispute with him is only about the extent – and the developmental significance – of ego-centrism in early childhood. I want to argue that the difference between child and adult in this respect is less than he supposes.

(Donaldson 1978: 25)

Differences between pre-operational and operational children are thus not quite as significant as was suggested by Piaget and his colleagues. The supposed abrupt change around the age of 7 seems more likely to be a gradual, continuous change, in that older children can achieve higher levels of within-stage consistency with fewer 'decalages' (slips, mistakes in the performance).

Quote 1.3 On the differences between pre-operational and operational children

It seems likely that, as far as the school years are concerned, the difference between younger and older children will turn out to be that the former can do what the latter can; but only sometimes, only under favourable conditions, only with help, only without distractions, only up to a point, without so much efficiency, without so much self-control, without so much awareness of the implications and without so much certainty.

(Meadows 1996: 29–30)

Piaget's assessment of the formal operational stage has also been criticised. It has been shown that even adults can be 'tricked into' giving the wrong answer in an operational problem-solving task, if the phrasing of the questions is misleading (e.g. Winer, Craig and Weinbaum 1992). In addition, as Wood (1998) and Donaldson (1978) both emphasise, adults do not always think according to the rules of formal logic. Indeed, this type of thinking is not generally necessary and practical in everyday life. Sometimes everyday rules may coincide with formal logic but other times they do not. Finally, one more point is significant. Piaget suggested that adolescents would reach the pinnacle of human development by about 12 years of age, yet there is plenty of evidence suggesting that development is nowhere near complete by this age. In fact Wood argues that many crucial improvements take place beyond 12 years of age.

Quote 1.4 On developments beyond the formal operational stage

Even though Piaget's claims, as they stand, seem overconfident regarding adolescent thought, there is plenty of evidence coming from other research to suggest that important developments take place around puberty (age 11–13). One line of evidence strongly suggests that literacy and especially the extended use of both reading and writing both trigger and facilitate important changes. Both reading and writing involve ways of communicating that transform the nature of children's knowledge of language and lead to more analytical ways of thinking.

(Wood 1998: 200)

Despite these criticisms, Piaget's legacy still lives on, albeit in significantly altered forms, i.e. with less rigidly described stages. Neo-Piagetian theorists (e.g. Karmiloff-Smith 1992; Halford 1992; Case 1991) still continue to argue that there are discrete stages of development in childhood.

1.3 Vygotsky's theory of development

Lev Vygotsky (1896–1934) was a Russian psychologist, a contemporary of Piaget. Just like Piaget, he has also been enormously influential in the field of education. As opposed to Piaget, his theory emphasises continuity in development rather than discontinuity or 'stages'. It focusses more broadly on the crucial role of social environment, and particularly on the role of expert helpers and the quality of their assistance to novice learners.

Quote 1.5 On the difference between Piaget's and Vygotsky's approaches to child development

Rather than being predominantly based on direct encounters with the physical world, for Vygotsky the construction of knowledge and understanding is an inherently social activity. Thus the child's interactions with other people, notably those who are more advanced and capable members of the society in which the child is growing up, mediate the child's encounters with the world-to-be-learned-about.

(Mercer and Littleton 2007: 13)

Vygotsky's interest is in the social processes of learning between people and how these processes contribute to and complement the individual's internal development. Any social encounter is situated in the local context but also in a particular historical and cultural setting. To describe how children learn from parents and teachers, Vygotsky proposed the 'law of cultural development' as an explanation. The adult and the child interact and together they construct new knowledge (*intermental* stage) and