Peter Westwood

What teachers need to know about

Teaching methods

What teachers need to know about Teaching methods

PETER WESTWOOD

ACER Press

First published 2008
by ACER Press, an imprint of
Australian Council *for* Educational Research Ltd
19 Prospect Hill Road, Camberwell
Victoria, 3124, Australia

www.acerpress.com.au
sales@acer.edu.au

Edited by Carolyn Glascodine
Cover and text design by Mary Mason
Typeset by Mary Mason
Printed in Australia by Ligare

National Library of Australia Cataloguing-in-Publication data:

Author:	Westwood, Peter S. (Peter Stuart), 1936–
Title:	What teachers need to know about teaching methods / Peter Westwood
Publisher:	Camberwell, Vic. : ACER Press, 2008.
ISBN:	9780864319128 (pbk.)
Notes:	Includes index.
Subjects:	Teaching—Methodology. Education—Philosophy.

Dewey Number: 371.102

Contents

Preface

A teaching method is characterised by a set of principles, procedures or strategies to be implemented by teachers to achieve desired learning in students (Liu & Shi, 2007). These principles and procedures are determined partly by the nature of the subject matter to be taught, and partly by our beliefs or theories about how students learn.

In the first half of the twentieth century, the dominant form of pedagogy was almost entirely teacher-directed instruction together with heavy use of textbooks, drill and practice. The focus was clearly on mastery of subject matter and little thought was given to how best to facilitate such learning in students. In every lesson, teachers tended to lecture and demonstrate first, then set their students related deskwork to do. The more imaginative teachers encouraged a little discussion, but in general 'a good class was a quiet class'. Students' deskwork was later marked and returned, and students were graded on their results. The same approach was used to teach almost all subjects in the curriculum. No one questioned whether the method was effective; it was the tradition.

By the 1950s, teachers were being encouraged to use a 'project approach' and to engage students in more group work. Some teachers resisted even these modest changes. But slowly over the next decade more innovative approaches did appear, with activity-based methods recommended in the primary years, and the use of the (then) 'new' medium of educational television and film. Teachers noticed that children showed greater motivation and interest when teaching methods were varied.

The period from the 1970s to 2000 saw a sudden growth in educational research exploring the effects of different approaches to teaching. Simultaneously, research in the field of psychology was continuing its investigations into how humans learn – how they acquire knowledge, how they process information, how they develop skills and strategies, how they think and reason. Gradually, evidence from these two separate fields of

research has started to coalesce. Now, the appropriateness and efficacy of a particular teaching method can be considered in relation to the type of learning it is supposed to bring about, and in relation to characteristics of the learners. Research into methods is, of course, continuing; and debates arising from different theories of learning and how these impact upon methods are still occupying the pages of very many educational psychology journals. Unfortunately, the average teacher is not in a position to access such journals, so there remains a large gap between research evidence and teachers' awareness of effective methodology. This text is a small step towards bringing the current evidence and the debates into the hands of all teachers.

My sincere thanks to Carolyn Glascodine for her skilled work in preparing the manuscript for publication. My gratitude extends also to the friendly, efficient and supportive staff at ACER Press.

PETER WESTWOOD

RESOURCES www.acer.edu.au/need2know

Readers may access the online resources mentioned throughout this book through direct links at www.acer.edu.au/need2know

one

Conceptualising learning and teaching

KEY ISSUES

- **The nature of teaching:** A leading question in education today concerns the role of the teacher. Should teachers directly instruct their students? Or is the teacher's role simply to encourage and support students as they learn and construct knowledge for themselves?
- **Constructivist beliefs:** Constructivists believe that traditional didactic teaching represents a largely unsuccessful attempt to transmit knowledge in a predigested form to learners. They believe that learners must construct knowledge from their own activities. Is this true?
- **Instructivist beliefs:** In contrast to the constructivists' view of learning, instructivists believe that direct teaching can be extremely effective. Is this true?

What is 'teaching'? Most dictionaries favour a simple definition such as 'the imparting of knowledge or skill; the giving of instruction'. Similarly, 'instruction' in this context is usually defined as 'furnishing others with knowledge and information, especially by a systematic method'. It is only in the last decade that these traditional definitions have been challenged and the role of a teacher somewhat redefined due to new beliefs about how learning occurs, and the optimum conditions under which it takes place. Davis (1997) suggests that the design and selection of teaching methods

must take into account not only the nature of the subject matter but also *how* students learn.

In recent years the central debate surrounding teaching and learning has hinged on the relative merits of 'constructed knowledge' versus 'instructed knowledge' (e.g., Hmelo-Siver et al., 2007; Kirschner et al., 2006; Rowe, 2006; Scruggs & Mastropieri, 2007). On the one hand, *constructivists* believe that the very nature of human learning requires that each individual create his or her own understanding of the world from firsthand experience, action and reflection, not from having predigested information and skills presented by a teacher and a textbook (Zevenbergen, 1995). On the other hand, *instructivists* believe firmly in the value and efficacy of direct and explicit teaching, particularly for achieving certain goals in education. They consider that it is not only possible but also highly desirable that learners follow a structured course in which important information and skills are presented in an orderly and sequential manner, practised, assessed and reviewed regularly.

To some extent, the constructivist and instructivist perspectives are represented in the two contrasting teaching approaches that Prosser and Trigwell (2006) identify in their instrument, Approach to Teaching Inventory (ATI). One approach is clearly student-focused and primarily concerned with bringing about deeper conceptual understanding and change in students. The other is more teacher-focused and concerned with effective transmission of information and skills from teacher to learner. These two approaches are also referred to in the current professional literature as 'minimally guided instruction' and 'explicit instruction' respectively (Kirschner et al., 2006). Some writers even see the two approaches as simply being what we tend to call 'progressive methods' versus 'traditional didactic teaching' (e.g., Adkisson & McCoy, 2006).

From the point of view of busy practising teachers, it is very unfortunate indeed that almost all the worthwhile current debates on methods of instruction are being conducted in psychology journals rather than publications that teachers can easily access and read. To compensate, this chapter will provide coverage of the key issues involved in the methods debate. Understanding the rationales underpinning learner-centred and teacher-centred approaches is essential for guiding the selection of effective teaching methods for use in our classrooms.

Constructivism

Constructivism is a theory about human learning, not specifically about a method of teaching (Rowe, 2006). It can be argued that constructivist principles may be implemented through several different approaches to teaching, as we will see later.

Since the 1990s, constructivism has spread as a strong influential force, shaping education reform across many areas of the school curriculum and spawning many new learner-centred approaches to teaching. It is certainly the major influence on the content presented in university methodology courses for trainee teachers at this time.

The underlying principles of constructivism can be traced back to the learning theories of John Dewey (1933), Jean Piaget (1983) and Jerome Bruner (1961). In various ways, these pioneers stressed the essential role of activity and firsthand experience in shaping human learning and understanding. Bruner, for example, devised the hybrid science and social studies course known as *Man: A course of study* (MACOS), involving children in hands-on discovery, problem solving, inductive thinking and reasoning. These early theorists also recognised that learning can only occur to the extent that new information links successfully with a learner's prior knowledge and experience. Other pioneers, such as the Russian psychologist Lev Vygotsky (1962, 1978), added the view that learning is greatly enhanced by collaborative social interaction and communication – in other words, discussion, feedback and sharing of ideas are powerful influences on learning. Vygotsky's view has been termed 'social constructivism' to differentiate it from Piaget's view that is often called 'cognitive constructivism' or 'structuralism', and is less concerned with language and social interaction (Santrock, 2006). Principles of constructivism have been articulated clearly by writers such as von Glasersfeld (1995) and DeVries et al. (2002).

There is a natural commonsense appeal to the notion of learners constructing their own knowledge through their own endeavours, because most of what individuals learn in everyday life clearly comes from personal discovery and experience, not from instruction. Walter Dick (1992), an instructional design expert, suggested that the constructivist perspective meshes well with the current humanistic and developmental orientation

evident in most of our schools. There is no doubt that in its various guises (e.g., whole language approach, process writing, problem-based learning, inquiry approach and discovery method) the notion of a learner-centred constructivist approach has been readily accepted without question by government departments of education, university departments of methodology and teaching practice, and by many teachers. In recent years constructivism has been virtually the only view of learning presented to trainee teachers in colleges and universities (Farkota, 2005; Rowe, 2006; Westwood, 1999).

Constructivism has brought with it a whole new set of terms – learning has become 'knowledge construction'; a class of students has become a 'community of learners'; 'learning by doing' has become 'process approach' or 'experiential learning'. In addition, giving students support in the form of hints and advice has become known as 'scaffolding'. Key words in connection with curriculum are 'authentic', 'meaningful' and 'developmentally appropriate'. Typical goals for constructivist classrooms are to help children become inquisitive, inventive and reflective, and to encourage them to take the initiative, think, reason and be confident to explore and exchange ideas with others (Project Construct, 2004).

Active learning

Mayer (2004, p. 14) comments that, 'As constructivism has become the dominant view of how students learn, it may seem obvious to equate active learning with active methods of instruction'. The constructivist view favours teaching methods that focus primarily on learners playing the active and major role in acquiring information and developing concepts and skills while interacting with their social and physical environment. The role of the teacher becomes one of facilitator and supporter, rather than instructor. The importance of social interaction, language and communication is recognised in constructivist classrooms and therefore much group activity, discussion and cooperative learning is encouraged.

A pervading assumption of constructivist rationale is that children are self-motivated and self-regulating beings who will acquire the fundamental skills of reading, writing, spelling, calculating and problem solving as by-products of engaging in, and communicating about age-appropriate, meaningful activities every day. Direct teaching of these fundamental

skills is therefore frowned upon, and activities such as drill and practice are dismissed as boring and meaningless rote learning.

Deconstructing constructivism

Given that constructivist philosophy is exerting such a strong influence on education policy and classroom practice, it is important to test some of its basic assumptions. For example, is it really true that learners can only construct meaning for themselves? Is it not possible for knowledge and meaning to be conveyed directly from one individual to another? And is direct teaching not, at times, the most effective method of presenting new information and skills, particularly to young and inexperienced learners? Creemers (1994) made the simple but pertinent comment that if you want students to learn something, why not teach it directly?

Is it true that knowledge cannot be conveyed directly to learners?
Presenting knowledge directly to a learner does not prevent the individual from engaging in the mental processes of making meaning. Indeed, clear presentations of new information may greatly facilitate that process. On the important role of the teacher as instructor, Yates and Yates (1990) observed that while learning does indeed occur through engagement with resources such as textbooks, articles, models, diagrams, computer programs, apparatus and films, learning *also* involves, '… exposure to a human being who organises and presents new knowledge to be assimilated and hence reconstructed in the mind of the student' (Yates & Yates, 1990, p. 253).

Mayer (2004) suggests that many constructivists stress the importance of learners' *behavioural* activity in acquiring personal knowledge, while overlooking the essential role of *cognitive* activity. It is perfectly possible to stimulate cognitive activity by direct teaching through verbal and visual means, not necessarily by physical activity. In other words, it doesn't necessarily require 'hands on' to switch 'minds on'; clear and direct explanations and presentations can stimulate thinking. Pressley and McCormick (1995) believe that good instruction that includes modelling and high-quality, direct explanation involves students in a great deal of mental activity. They argue that modelling and explanation can stimulate knowledge construction. In a methodology text on the role of teachers' explanations Wragg and Brown (1993, p. 3) even define explaining as

'giving understanding to another'. It is possible that a clear explanation to a group of students helps minimise differences in their prior knowledge about the given topic, and thereby reduces the potential for misconceptions or learning difficulties to arise.

Are methods based on constructivist principles suited to all areas of learning?

A second issue worth addressing concerns the implication that constructivist approaches can be (and should be) applied for all areas of the curriculum. According to Walter Dick (1992), some advocates make it appear that the theory applies to all domains of human learning. He raises the legitimate query, 'What are the boundaries of the theory? And, is it really a theory, or is it an instructional strategy for a particular type of learning outcome?' (p. 96). For example, a constructivist approach to problem solving in mathematics or hypothesis testing in science makes good sense. A constructivist 'find-out-for-yourself' approach to basic literacy and numeracy learning does *not* make good sense. As Yates (1988, p. 8) has observed, '… requiring a child to actively discover his or her way toward a basic knowledge of literacy and numeracy is to confront that child with tasks of immense difficulty. On the other hand, exposure to good direct teaching will enable the child to develop a more substantial knowledge base that will bootstrap the child's thinking processes in subsequent situations both in and out of school'.

Rather than being generally applicable to all types and levels of learning, it is conceivable that constructivist strategies are actually important at a particular stage of learning. For example, Jonassen (1992) presented a three-stage model of knowledge acquisition, namely:

- Stage 1 – initial knowledge acquisition
- Stage 2 – advanced knowledge
- Stage 3 – expertise.

He supports the view that initial knowledge acquisition may well be best served by direct teaching and that advanced knowledge acquisition leading to expertise may benefit most from a constructivist approach. For example, in the domain of literacy teaching, establishing the basic skills involved in early reading, such as word identification and decoding, may best be served by direct teaching, while higher-order critical reading and deep comprehension

may represent advanced knowledge and expertise constructed upon the firm foundation created by the earlier direct teaching. Similarly, advanced knowledge and expertise required for higher-order mathematical problem solving can best be developed on a firm foundation of basic number skills and number sense developed by earlier direct teaching.

Are constructivist approaches ideal for all learners?

Constructivist approaches that use minimal instructional guidance require that learners be self-motivated, capable of thinking and reasoning, and in possession of sound independent learning skills. Unfortunately, many students in our schools do not meet these requirements and therefore become lost and frustrated in unstructured learning activities. Pressley and McCormick (1995) have observed that for many of these students, unstructured discovery-type activities where learners must independently acquire or construct essential information are very inefficient indeed for achieving the desired learning. They require far longer than it would take to teach the same knowledge to students using direct explanation. There is evidence that such students make much better progress when they are taught explicitly and directly (e.g., de Lemos, 2004; Ellis, 2005; Mastropieri et al., 1997; Swanson, 2000). In particular, students with learning difficulties, poorly motivated students and students from disadvantaged backgrounds appear to acquire basic academic skills more rapidly and firmly when taught by explicit methods involving a great deal of teacher modelling and guided practice.

It is also pertinent to point out that minimal guidance from teachers is not necessarily perceived as acceptable by some students who are mature enough to know when their needs and expectations are not being met. For example, Delpit (1988, p. 287) quoted one student as saying: 'I didn't feel she was teaching us anything. She wanted us to correct each other's papers and we were there to learn from her. She didn't teach us anything, absolutely nothing'. Similarly, Vaughn et al. (1995) reported that most students in their study wanted more, not less, direction from the teacher, especially when dealing with difficult material.

It is clear that using a classroom approach based firmly on constructivist principles in no way guarantees that all students in the class will construct identical knowledge about a given topic. A learner can construct misconceptions as well as accurate conceptions. How well a learner makes

sense of new information (and contributes usefully to collaborative group work) depends greatly on his or her prior knowledge and experience; and these two prerequisites differ greatly from one learner to another. This is why the common statement is made that 'one-size instruction does not fit all', be it student-centred activity or direct instruction.

Are constructivist approaches compatible with human cognitive processing?

There is a growing body of information from research on 'cognitive load theory' (CLT) that raises doubts about the efficacy of unstructured and unguided discovery-type activities. CLT research is particularly concerned with tasks where learners are often overwhelmed by the amount and diversity of information that needs to be processed and remembered simultaneously – as can easily happen with discovery or problem-based learning situations (Paas et al., 2004). Researchers in CLT are suggesting that learning activities with minimal guidance from teachers are less effective than guided instruction because they place unreasonable demands on learners' information processing capabilities, in particular on working memory (Kirschner et al., 2006). Paas et al. (2004, p. 1) explain the problem in these terms:

> … performance degrades at the cognitive load extremes of either excessively low load (underload) or excessively high load (overload) [and] under conditions of both underload and overload, learners may cease to learn.

With reference to overload, Kirschner et al. (2006, p. 80) even observe that, 'As a consequence, learners can engage in problem-solving activities for extended periods and *learn almost nothing*' [emphasis added]. While all learning activities and tasks do involve some degree of intrinsic cognitive load, experts in this area are recommending that instructional materials and methods should try to minimise this load by breaking tasks down into manageable steps and providing sufficient support for learning.

Critics of this CLT view suggest that while the theory of cognitive overload may well hold good for totally unguided discovery and exploratory methods, it is not valid for most problem-based or inquiry approaches in use today, because teachers do in fact provide learners with necessary support and guidance (scaffolding) as they engage in learning activities (Schmidt et al., 2007).

LINKS TO MORE ABOUT CONSTRUCTIVISM

- For a more detailed explanation of constructivism in the classroom, see *Constructivism as a paradigm for teaching and learning*. Available online at: http://www.thirteen.org/edonline/concept2class/constructivism/index_sub2.html
- Some good comments regarding implementation of constructivist principles are available online at: http://leo.oise.utoronto.ca/~lbencze/Constructivism.html
- http://www.teach-nology.com/currenttrends/constructivism/classroom_applications
- Interesting descriptions of a curriculum designed on constructivist principles (Project Construct) are available online at: http://www.projectconstruct.org/misc/pdf/framework/ec/chapter1.pdf
- See also a paper from *The Constructivist*, 17, 1, 2006, at: http://www.odu.edu/educ/act/journal/vol17no1/cunningham.pdf
- Cognitive Load Theory: Wikipedia has an excellent summary of the development and implications of cognitive load theory. Available online at: http://en.wikipedia.org/wiki/Cognitive_load

Direct teaching

Direct teaching manifests itself in various forms and is associated with several different descriptors; for example, explicit instruction, systematic instruction, direct instruction (DI), active teaching and teacher-directed approach. All these forms of direct teaching share a set of basic principles including the setting of clear objectives for learning, systematic instruction that progresses from simple to more complex concepts and skills, ongoing monitoring of students' progress, frequent questioning and answering, re-teaching of content when necessary, practice, application and assessment.

Direct teaching is based on a firm belief that learning can be optimised if teachers' presentations (and the steps in learning) are so clear that they eliminate all likely misinterpretations and facilitate generalisation (Ellis, 2005). To this degree, direct teaching is a form of explicit instruction that attempts to present information to learners in a form they can easily access,

understand and master. It is argued that direct teaching procedures are based upon behavioural views of learning where modelling, imitation, practice, shaping and reinforcement are key ingredients for helping learners master the objectives set for each lesson. Hall (2002, n.p.) states that, 'Explicit instruction is a systematic instructional approach that includes a set of delivery and design procedures derived from effective schools research merged with behavior analysis'.

The generic model of direct (or explicit) teaching was influenced by Rosenshine's (1986) seminal analysis of effective instruction in which he identified the six major components of teaching that appeared to be associated most clearly with positive academic achievement in students (see also Rosenshine & Stevens, 1986). The six components are:

- daily review
- clear presentation of new material
- guided practice by students
- immediate correction and feedback from teacher
- independent practice
- weekly and monthly reviews.

Although direct teaching takes many shapes and forms (see chapter 2), the model presented above is particularly associated in the United States of America (USA) with Hunter (2004). Her approach to lesson planning, delivery, and assessment has been quite influential in many teacher education programs in that country. Trainee teachers (and others) appreciate the effective structure that it provides for operating successful lessons.

LINKS TO MORE ABOUT EXPLICIT TEACHING

- For information on explicit teaching check the material available online at: http://olc.spsd.sk.ca/DE/PD/instr/strats/explicitteaching/index.html. This website also has valuable notes and comments on a wide range of teaching strategies.
- See also: http://www.bayvieweduc.ednet.ns.ca/Smoran/Reader'sworkshop/explicit_teaching_steps.htm

http://www.bayvieweduc.ednet.ns.ca/Smoran/Reader'sworkshop/explicit_teaching_steps.htm

- For the Madeline Hunter Model of direct teaching see AdPrima on:
  http://www.adprima.com/direct.htm and
  http://www.humboldt.edu/~tha1/hunter-eei.html#eei
  Also at:
  http://www.highlandschools-virtualib.org.uk/ltt/inclusive_enjoyable/direct.htm

Direct Instruction (DI)

The most formalised model of direct instruction was devised by Engelmann at the University of Oregon, together at various times later with Becker, Carnine, Silbert, Gersten, Dixon and others. This highly teacher-directed form of curriculum delivery adopted the capitalised form for its title – *Direct Instruction* (DI). The approach was originally associated with the commercially produced program called DISTAR which presented step-by-step instruction in phonics, language and number skills for disadvantaged and at-risk children. More recently, published DI materials have been expanded to cover writing, spelling, reading comprehension, mathematics and problem solving for a much wider age and ability range.

DI is a fast-paced method of teaching that provides very high levels of interaction between students and their teacher. Instructional procedures are based on clear objectives, modelling, high response rate, reinforcement, error correction, criterion-referenced performance and practice to mastery. The beliefs underpinning DI are that (a) all students can learn if taught correctly; (b) lesson content must be reduced to teachable and learnable steps; (c) basic language, literacy and numeracy skills must be mastered thoroughly to provide a firm foundation for future learning.

DI sessions follow a standard format. Children are seated in a semi-circle facing the teacher. The teacher may use the whiteboard, overhead projector, big book, or other methods to present visual information (e.g., alphabet letters, words, numbers). Children are taught in small groups, based on ability. The teacher gains and holds children's attention as he or she conducts the lesson. Scripted presentation ensures that all steps in

the teaching sequence are followed and that all questions and instructions are clear. Children actively respond to the frequent questions or prompts, either as a group or individually, with approximately 10 responses elicited per minute. Teacher gives immediate feedback and correction. Rather than requiring each child to 'raise a hand' to reply, much choral responding by the group is used as a strategy for motivating students and maximising participation.

Is direct instruction appropriate for all instructional purposes?

Ormrod (2000) suggests that direct instruction is most suitable for teaching basic information and skills that are well defined and need to be mastered in a step-by-step sequence. Research indicates that direct teaching can be a highly effective technique for this purpose, leading to substantial gains in achievement and increases in students' self-efficacy. Rosenshine's (1986) original description of explicit instruction indicated that the approach was particularly effective for teaching mathematical procedures and computation, word recognition and decoding strategies, science facts and concepts, social science facts and concepts, and foreign language vocabulary. More recent research has confirmed the success of the direct approach for teaching the early stages of essential literacy and numeracy skills (e.g., Adams & Engelmann, 1996; Farkota, 2003; Swanson, 2000; White, 2005). The recommended use of direct instruction has now been extended beyond mastery of basic information and skills to the explicit teaching of cognitive strategies; for example, students are taught strategies for comprehending and summarising text, planning and composing written assignments, and solving mathematical and other problems (e.g., Chalk et al., 2005; Graham & Harris, 2005).

Direct instruction is, of course, much less appropriate for achieving affective and social goals in education, such as those covering emotions, beliefs, values and attitudes. Other approaches are also necessary for fostering students' creativity, initiative and critical thinking.

What problems are associated with direct instruction?

Many teachers, particularly in Australia where constructivist influences are strong, react very negatively towards any extreme form of direct teaching, claiming that it is much too prescriptive, too highly structured, too rapidly

paced, and with too much emphasis on basic skills. For example, with the pure form of DI they are uncomfortable with the notion of following a script for teaching each lesson, and they claim that DI allows very little opportunity for a teacher or the students to be creative. The highly structured form of DI has gained more support in special education and remedial teaching contexts than in regular classrooms, despite its proven efficacy.

Unlike the more generic forms of direct teaching, the formal version of DI is not an approach that can simply be adopted and adapted by a teacher as part of his or her repertoire of teaching methods. To use the published forms of DI, a teacher requires specific training. The teacher's school also needs to make a firm commitment to the implementation of the approach across all classrooms. The small-group instruction has implications for staffing, and also necessitates major restructuring of the timetable so that children can go to their appropriate ability group for sessions each day.

LINKS TO MORE ABOUT DIRECT INSTRUCTION

- Schug, M. C., Tarver, S. G., & Western, R. D. (2001). Direct Instruction and the teaching of early reading. *Wisconsin Policy Research Institute Report*, *14*, 2, 1–31. Available online at: http://www.wpri.org/Reports/Volume14/Vol14no2.pdf
- Useful material and suggestions for implementing DI can be found at the Fairfield-Suisan Unified School District website at :http://ww4.fsusd.k12.ca.us/education/PLC/ResearchBased-DI.html

Interactive whole-class teaching

A much less structured form of direct teaching – interactive whole-class teaching – has gained somewhat greater acceptance, particularly in the United Kingdom and some other countries. Studies of teaching methods used in countries where students do extremely well in international surveys of achievement (e.g., Hungary and Japan) seem to indicate that the teachers in those countries employ interactive whole-class teaching methods widely and effectively.

This approach, as with other forms of direct teaching, aims to generate a very high level of attention, engagement and active participation by students through establishing a high response rate to teacher's questioning and prompting. The teacher may begin the lesson by presenting information using an explanatory or didactic approach, but then students are expected to enter into dialogue and contribute their own ideas, express their opinions, ask questions, and explain their thinking to others (Dickinson, 2003; Reynolds & Farrell, 1996). Learning is not achieved here by adopting a simplistic formula of a mini lecture to the class followed by 'drill and practice', or by expecting students to teach themselves from books or other materials. Learning occurs because students are engaged cognitively in processing and using relevant information, expressing it in their own words and receiving feedback.

Jones and Tanner (2005) have remarked that there are differences among teachers in how they interpret the concept of interactive teaching and how they accommodate it into their own style. To be effective, a teacher needs to be very skilled at drawing all students into the lesson by encouragement, interest and direct questioning. Teachers also need to be adaptable and able to 'think on their feet' in order to respond to, and capitalise fully on, students' contributions. When engaged in interactive teaching, some teachers do not seem to recognise the value of encouraging 'choral responding' (all students answering together sometimes) and what should be a very brisk rate of progress through the lesson may be slowed unintentionally by asking individual students to raise a hand if they wish to answer a question or make a contribution.

Interactive whole-class teaching has been recommended in government guidelines in the United Kingdom as a possible means of raising students' attainment levels in basic literacy and numeracy (e.g., DfEE, 1999). While containing the main ingredients of other forms of direct teaching, this interactive model is not constrained by scripted lessons and can be much more easily accommodated into teachers' existing teaching styles. However, some teachers still have difficulty moving in this direction (Hardman et al., 2003; Hargreaves et al., 2003).

The following chapter explores the connection between methods described in this chapter and their appropriateness for teaching particular types of subject matter.

LINKS TO MORE ABOUT INTERACTIVE WHOLE-CLASS TEACHING

- Smith, K., Hardman, F., Wall, K., & Mroz, M. (2004). Interactive whole-class teaching in the National Literacy and Numeracy Strategies. *British Educational Research Journal, 30, 3*, 395–412. Available online at: http://www.latrobe.edu.au/educationalstudies/assets/downloads/berj303.pdf
- London Borough of Barking and Dagenham: *A coherent pedagogy for secondary schools*. http://www.bardaglea.org.uk/pedagogy/practice-implications.html and http://www.bardaglea.org.uk/pedagogy/practice-principles.html
- Helpful advice on operating whole-class interactive lessons (particularly the use of questioning within such lessons) available online at: http://www.cchsonline.co.uk/teep/etb/teepmodule3interactiveteaching.pdf