Planning effective teaching strategies
Michael Arthur-Kelly & Judith Neilands

This chapter aims to:

Examine aspects of differentiated curriculum, teaching and the learning environment relevant to the education of all students, including individuals with additional needs

Introduce a model of classroom planning that is practical and relevant to the needs of teachers working in regular schools and the students they teach

Explain several key concepts and strategies that support the design of effective teaching interventions, including universal design, curriculum-based assessment, mastery learning and task analysis.

Visit the companion website to see xxx for this chapter.
As suggested in the earlier chapters of this book, students with additional needs are not vastly different from their peers who do not have a disability. In fact, it is much more helpful to consider similarities between the two groups rather than differences. The same point is true for the approaches effective teachers use when including students with differing levels of ability in the one class (see Figure 5.1). The design and implementation of class programs that meet the needs of all students is a process of differentiation grounded in principles of effective teaching and learning that are familiar to all teachers. Recent initiatives such as a research synthesis of effective teaching by Ellis, Worthington and Larkin (2006) and more locally, the Quality Teaching project in NSW (NSW Department of Education and Training 2003), highlight this point.

Figure 5.2 shows some of the factors that play a part in the achievement of effective teaching and learning for students, under the headings of curriculum issues, instructional issues and aspects of the learning context. The points that have been listed in this figure are not exhaustive and it may be useful to develop other topics for further consideration and follow-up reading.
A number of the factors identified in this aspect of Figure 5.2, such as task achievability and curriculum adaptation, have already been discussed in chapter 4. These factors are underpinned by the quality of the relationship between the learner and the curriculum on offer in the school. Terms such as accommodations and adjustments, often used in educational literature and syllabus documents, emphasise the fluid nature of curriculum support in modern schools. For example, the effective teacher will consider questions such as:

- To what degree does the student recognise the link between current and past learning experiences and lesson content?
- How achievable is the material or task presented to the student?
- Is the material presented to the student at a level that will stimulate deep learning?
- Can the student identify the goal of the task and recognise its relevance and application (target-directed learning)?
- Should assessment material be presented in an adapted format or under different conditions in light of the student’s particular needs?

As suggested by the example in Box 1.1, an underlying theme in any analysis of curriculum is the level of personal motivation to engage in learning new content and skills, and the degree to which individual needs are met by such experiences. The nature and relevance of school curriculum has been the subject of much discussion in the last decade, and several authors have examined the relationship between the satisfaction of personal and academic needs in the school.
Tim is in Year 9 and is struggling to maintain an interest in the subjects he is completing. Boredom, hormones, a lack of achievement and little connection between what happens in class and everyday life have combined to produce a sense of disillusionment and frustration. Tim is increasingly in trouble with teachers for talking constantly and wasting his time and that of his friends. He recently received a very poor report in the mid-year assessments. Although his family has expressed concern for his school work, classroom behaviour and poor results, Tim is finding it very difficult to break this emerging pattern of failure and possible resentment.

**Figure 5.3** Teachers may need to use a range of alternative assessments
setting (Arthur-Kelly et al. 2007; Glasser 1998). In this context, the teacher is concerned with the interaction between school curriculums and student variables, the nature of what is taught to students, and the impact for the individual. A central consideration will be the provision of adjusted assessment. For some students, it will be vital for teachers to use a range of alternative techniques to ascertain exactly how skilled a student is in a particular topic area or skill sequence (see Figure 5.3), in order to gain a picture of anticipated instructional needs and learning supports that may be required.

Implicit in this personalised approach is a recognition of individual preferences both in receiving information and displaying an understanding or use of it in applied tasks. For example, if writing is a challenge, verbal responses may be permitted for a particular student. Similarly, modifications to the curriculum offered in classrooms that include students with additional needs can be expected to enhance engagement and achievement levels. In their observational study of 45 students with a range of disabilities enrolled in regular secondary classrooms in the USA, Lee et al. (2010) concluded that there were positive changes achieved for teachers and their students when curriculum modifications were made to key learning areas. For example, students were noted to be more engaged in learning activities, and teachers, happily, were less caught up in classroom management activities that drew them away from the provision of instruction. With this important research in mind, it is appropriate then to turn to the question of how modified curriculum is taught, and to consider the complex relationship between curriculum and instruction.

**INSTRUCTIONAL ISSUES**

In the past two decades, educational research in the area of effective instruction has blossomed (Algozzine, Ysseldyke & Elliott 1997; Ellis et al. 2006; Good & Brophy 2000; Westwood 2007; Wolfe 1998). In exploring the many linkages between curriculum (what to teach) and instruction (how to teach), teachers continue to generate creative approaches to program design (Rosenshine 1995), including those centred on cognitive and metacognitive techniques such as strategy instruction and content enhancements (Bulgren 2006; Deshler et al. 2001), student-directed learning (Agran et al. 2003), cooperative learning (Goor & Schwenn 1993; Jenkins et al. 2003) and the principles of behavioural analysis (Alberto & Troutman 2006; Duker, Didden & Sigafoos 2004). At the heart of such diversity, however, is an instructional design that remains constant.

In Figure 5.4 a basic instructional cycle, perhaps typical of a daily lesson, is set within the larger process of instructional design. The outer cycle describes the key phases all teachers go through when designing instruction, while the inner cycle represents one of a number of approaches to the delivery of instruction in a daily lesson. Both cycles reflect the same process on a macro and micro scale. The themes raised in this figure are not new and have been discussed by many writers in the area of instructional effectiveness (Algozzine et al. 1997; Christenson, Ysseldyke & Thurlow 1989; Rosenshine 1995; Wolfe 1998). However, current literature (and common sense!) suggest that instruction and curriculum (the how and the what of teaching) are best considered as part of an integrated approach to effective teaching and learning (Arthur-Kelly et al. 2007; Dempsey & Arthur-Kelly 2007).

Hudson, Lignugaris-Kraft and Miller (1993), for example, drew attention to the ways in which teachers can link content enhancements such as advance organisers and mnemonics with various instructional stages, including the presentation of new material, and guided and
independent practice, in order to optimise student learning outcomes (also see Bulgren 2006). In a complex educational area such as reading acquisition and development, the same interplay between curriculum goals and instructional variables is noteworthy. For example, the US National Reading Panel (2000, in Musti-Rao, Hawkins & Barkley 2009) listed the components that constitute effective reading instruction: phonemic awareness, alphabetic principles, fluency, vocabulary and comprehension. Highlighting the need for fluency, Musti-Rao et al. (2009) have shown repeated reading intervention is a research-validated approach which can improve fluency, and thence comprehension, for readers at risk. Rosenshine (1995) drew attention to the research evidence for the critical linkage between an individual learner’s cognitive processing patterns and the features of instruction designed to support the learning process. Likewise, Ellis et al. (2006) provide an excellent discussion of 10 areas of research into effective teaching, along with relevant limitations and barriers. The interrelationship of student learning ability and needs, instructional behaviour by the teacher and the relevance of the curriculum on offer in the classroom is underscored in this valuable review.

Finally, a range of factors related to the quality of instructional delivery and support must also be considered in any discussion of effective teaching and learning. Examples include (but are
not limited to) pacing, types and amounts of feedback and reinforcement available, the strategic use of prompting strategies, provision of adequate learning time, and specific techniques such as teacher cueing, question distribution behaviours and grouping arrangements employed (Bauer & Shea 1999; Christenson et al. 1989; Duker et al. 2004; Ellis et al. 2006; Rieth & Evertson 1988; Rieth & Polsgrove 1994; Vaughn et al. 2001). Schloss et al. (1995) provided a review of a number of research-based principles and strategies for teaching, including prompting, chaining, modelling and shaping. In a review of direct instruction (DI), Magliaro, Lockee & Burton (2005) stress the research-based credentials over 30 years of this very focused teaching technology, which is essentially 'modelling with reinforced guided performance' (Joyce et al. in Magliaro et al. 2009). Recent iterations of DI are found in web-based instruction packages. Examples are provided in the weblinks at the end of this chapter.

A group size of three has been shown to maximise instructional time and use resources efficiently during reading tutoring with students at risk of failure. It was comparable with a 1:1 ratio in improving reading grades in a study involving 271 first-graders requiring supplemental reading instruction (Helf, Cooke & Flowers 2009). These approaches are central to good teaching and provide a foundation for student learning and motivation. As indicated in the next section, the quality of instruction achieved in a classroom is also a function of several contextual variables, such as climate and communication, which effectively set the scene for meaningful student participation in the learning process.

ASPECTS OF THE LEARNING CONTEXT

The learning context provided for students is a crucial factor in the achievement of productive and effective learning outcomes. Teachers face the daily challenge of establishing and supporting a rich learning environment that is stimulating and efficient and, most importantly, suitable to the diverse needs of the modern classroom (Keeffe & Carrington 2006; Loreman, Deppeler & Harvey 2005). Diverse backgrounds and cultural heritage are factors for teachers to consider in creating a classroom climate that taps into the cultural and linguistic resources within the students’ personal experiences and vocabularies (McQuiston, O’Shea & McCollin 2008). Although many aspects must be considered, three interrelated themes can be identified:


2. The classroom climate, typically described as the ‘feeling’ or atmosphere experienced by both class participants and visitors. This feature is usually related to the types of expectations teachers have of students, the variety of curricular and instructional approaches used in the promotion of learning and the degree of encouragement provided to students.

3. Communication processes have an integral role in the provision of a supportive classroom context. Factors to be considered may include the teacher’s use of effective listening skills, recognition by teachers that communication is a multimodal and complex process (Smith & Laws 1992), as well as the ability of students to listen effectively (Swain, Friehe & Harrington 2004).

Of course, learning contexts are much broader than the classroom. The school culture and the family both provide vital input to the learning process. At a school level, it is generally agreed...
that the climate of inclusion, and the use of ongoing systemic reflection and evaluation, is central to the achievement of optimal student learning outcomes (Ekins & Grimes 2009). Similarly, parental, sibling and extended familial interest in student abilities ensures that skills learnt at school are followed through in other situations. Schools that engage families in providing back-up to students and engage in the planning of mutually agreed educational programs are able to achieve valuable multiplier effects and a strategic improvement in the students’ achievement of learning outcomes that are valued by all.

The quality of the school and classroom context is central to the promotion of learning and behaviour, and readers are encouraged to pursue this area, and family perspectives on educational planning and instruction, in greater depth. Several writers have discussed the contribution of careful programming and teaching to the prevention of misbehaviour and the development of positive patterns of behaviour, emphasising the proactive role of the classroom teacher and the importance of understanding the ecology of the individual (Blankenship 1988; Arthur-Kelly et al. 2007; Smith & Misra 1992). Chapter 6 examines a range of strategies for encouraging appropriate behaviour in students and chapter 7 considers the impact of communication difficulties on behaviour. The interested reader may also wish to review papers by Babkie (2006), Daniels (1998) and Maag (2001) to help identify issues and strategies relevant to the prevention and management of disruptive behaviour in inclusive classrooms.

The following case study of Hayley’s college experiences (Narrative 5.1) illustrates many of the curricular, instructional and organisational aspects of effective teaching and learning discussed in the chapter to this point. The reader should note the interactive use of the principles and procedures described in Figure 5.2. For example, flexible organisational structures are used, including a variety of student grouping and team-teaching arrangements, in direct relation to the type of lesson content, available resources and, primarily, Hayley’s learning needs. Perhaps most importantly, note the rich insights provided by Hayley’s mother, Jenny.

**Hayley Bottrell – the college years**

Hayley enrolled for the final phase of her schooling at Tuggeranong College. She had enjoyed several transition visits and attended an information evening in the previous year, so she was very keen and excited about starting college. At the time, we thought she was lucky to have a friend, also with Down syndrome (DS), starting at the same college. We had decided to send Hayley to this particular college for a number of reasons:

- The college had not had a person with DS before, so Hayley would be in mainstream classes, with the teachers modifying her outcomes and making allowances for her, academically.
- There was no learning support unit (LSU), so the teachers would not be able to suggest a placement in the LSU if things got tough.
- There was an ‘Outpost’ room in the college where students with ‘special needs’ could go to receive extra help with their work and assignments.
- The college was near a major shopping centre which Hayley knew well, so that if she had a free lesson she could do what a lot of teenagers do, hang out at the shops with friends, window-shop, or have lunch there.
- The college was near a bus interchange and she would be able to catch one bus to and from home (the mother of the other girl with DS offered to teach Hayley to use the buses).
Hayley would receive 50 per cent support of a learning support assistant (LSA), funded by the Department of Education and Training. This translated into Hayley being supported by the LSA for most of her classes, as her friend with DS had the other 50 per cent support and they would be in all the same classes except for one.

Hayley’s first morning at college was very challenging. Just as well I had taken her and hung around. When she arrived, there were hundreds of students milling around the foyer. Unfortunately for Hayley, they were mostly much taller than her, and at 1.5 metres she couldn’t see a thing in the ‘crush’ so she got a bit upset. Once the crowd thinned, she was able to find her LSA and go to her classes.

As time went on, Hayley quickly managed to find her way around the college and was rarely late for class. The mobile phone she later received for her birthday turned out to be a ‘Godsend’ as her teachers could locate her quickly if they needed to. Hayley made many new friends, especially in dance but interestingly, not friends she would socialise with out of college. Although, many of the boys at dance thought Hayley was ‘a bit of alright’ after seeing her dance in her belly dancing costume.

Hayley’s subjects in Year 11 were cooking, English, maths, dancing and community studies. Her maths and English were classes for students with special needs and more often than not, each student in the class worked at their own individual program based on the same part of the curriculum. This worked well as most of the students had different needs and learning styles. At this stage Hayley was reading and comprehending at a Year 2 level and her maths knowledge was very basic. The outcomes for these classes were discussed and included on Hayley’s individual learning plan (ILP).

As the year progressed, it became evident that not all teachers were modifying the subject outcomes. Hayley often received the same assignments as everyone else and was expected to complete them by the due date. The LSA worked hard and would negotiate a modified assignment for Hayley. This was great, as it meant the assignments were more meaningful for Hayley and at her level. Only one teacher remained inflexible throughout Hayley’s college years. Not only did she not want the students with ‘special needs’ in her classes but she made few or no concessions to help them work towards their final grades. I became very good at ‘helping’ Hayley complete her assignments for that subject, with very little input from her. I received some very good passes in these assignments! In 2005, the college began to use a ‘modified’ pass mark for all students with special needs.

For each of her years at college, there were meetings regarding Hayley’s ILP. At these meetings we would discuss her progress, what worked, what didn’t, in which direction she was headed and what was needed to achieve her goals (i.e. devising, implementing, evaluating and reviewing). I was impressed, as these meetings covered a lot of ground which was made easier with most, if not all, of Hayley’s teachers and her LSA attending. It helped to have everyone’s collaboration and made the ILP process efficient. The only thing I wished was that Hayley could be more directly involved in the process. In saying this, I found it better to discuss with Hayley beforehand any concerns, experiences that were useful to her, what she enjoyed, what she wanted to be better at, her goals for the future, and how her teachers could help her achieve them. Hayley wouldn’t be able to convey all her thoughts on these issues, all at once, at a meeting.

One of her subjects, community studies, had a work experience component, so Hayley was organised to do work experience in a charity clothes store, which she enjoyed immensely. She also had work experience in a childcare centre which she wasn’t very keen on and in Target which she found ‘boring’, as it was the same thing day in and day out – putting clothes on hangers. At Target, her singing and dancing when she had nothing to do didn’t go down too well with the bosses either. This last experience caused us all a big ‘re-think’, as we had always assumed she’d end up working in retail because she loved clothes, fashion and shopping.

In June of Year 12, Hayley was offered a place in a course at the Canberra Institute of Technology (CIT), a Certificate I in Hospitality. She was lucky, as a student had left and they
needed the full quota for their funding. This course was funded by a grant through Woden Special School (Years 7 to 10) and ran for a year. This course had the same outcomes and expectations as the same course run for ‘mainstream’ students at CIT, but the difference was these students would do the same lessons twice in one week. The major key for success was repetition and ‘over-learning’. The students would cover the week’s lesson first at Woden Special School and then again later at CIT two days after. This method had proved highly successful in the past and many of the students went on to successful part-time and full-time employment because they had completed this highly regarded certificate.

The first component of the hospitality course was food preparation/cooking for the CIT café and the second was serving in the same café. Various fundraisers were held at Woden Special School which gave these students the extra experience they needed to pass. They were expected to wear the full chef’s uniform with chef’s hat in the kitchen and a waiter’s uniform complete with bow-tie and cummerbund when serving. What a year as you can imagine, ‘to-ing’ and ‘fro-ing’ from College, Woden Special School and CIT.

Canberra taxis are a nightmare, even when you have a permanent booking, and the bus training was interesting as she had two to catch, each way! We only lost Hayley on three occasions. Funnily, we always found her where she was meant to be, waiting at the right spot for the taxi or on a later bus! Again, her having a mobile was important for ‘peace of mind’ for us, not Hayley!

The following year, Hayley took part in the Rock Eisteddfod team representing the college, started training in tenpin bowling in readiness for the National Special Olympic Games, took up tennis and went to night dance classes in belly dancing and rock ’n roll. Hayley worked hard at actively keeping ‘in touch’ with her high school friends and had a very busy social life. She also attended sex education classes arranged by the college through Family Services.

Hayley passed her CIT course, which finished in June. At the end of the same year, Woden Special School received some extra funding for a job agency to run a six-week job skills course. This course covered many practical aspects in going for a job including putting together a résumé, what to wear and mock interviews. Most importantly, there was a graduation ceremony and the presenting of certificates at its completion. The college’s Year 12 formal was the highlight of the year. She was able to take her boyfriend at the time (he also had DS). They had a ball turning up in a black limousine and dancing the night away.

At the end of Year 12, with her input, we decided that Hayley should do a third year at college. Fortunately the college agreed. What a great gift, to have another year to consolidate before going into the workforce. There were many other reasons also:

- The year would be mostly dedicated to preparing her for the workforce with work experience in hospitality being the main and necessary component of the year.
- Hayley would still have LSA support to monitor her progress at work experience, help prepare her for such experiences with social stories targeting the many aspects of the job, including hygiene and help with bus training.
- Hayley could have a year at college without her ‘shadow’. Her friend she started college with became a bit of a burden. Hayley’s social interactions at college were hampered by her friend being unhappy when Hayley wanted to spend time with other students. Hayley was very outgoing and was quite independent but her friend depended on her.
- For Hayley, the main consideration was that she would be able to go to another Year 12 formal!

The extra year was all that we had hoped for. Hayley took three subjects at college: dance, ceramics and living skills. Living skills was a course devised with students like Hayley in mind. It consisted of cooking and everyday life skills. Hayley stayed on volunteering with the Salvos at the clothes store and had work experience, a placement the college found, in a café close to the college. This job went well but in the end, after two terms, it was decided that this job didn’t have enough to keep her occupied. This particular café was very small, with no more than eight tables and three staff which was one too many.
Shortly after, Hayley started work experience at a café with 30-plus tables. To get there required two buses and an interchange which the LSA trained her for. Hayley has recently signed up with a job agency and they will approach this café in December for part-time work for Hayley, so fingers crossed! Term 4 will involve a follow-up course to the Job Skills Program she completed the year before, and of course the Year 12 formal which she will attend with her new and current boyfriend.

It is important to mention that Hayley’s success has been largely due to the dedication of her LSAs, of which there were two during her time at college. Both LSAs made sure that Hayley had every chance to make decisions for herself and build her independence, doing very little ‘hand holding’. They went over and above what is required of them to ensure that Hayley had every chance for success. This sometimes required transportation to and from various venues. Often the little things can ‘make or break’ and it means so much more and makes things easier for us parents, if these things are seen to (for example making sure notes came home about excursions and college happenings; writing important comments, dates and deadlines in her diary; and generally letting us know how things were going and any problems that have occurred). The social stories were invaluable in helping Hayley understand what was required of her in different situations, especially in work experience.

Tuggeranong College has proved to be a wonderful setting for Hayley to grow, learn and extend herself. The experiences they provided for her have all helped to build a well-rounded young woman, ready for the workforce. Her confidence has increased immeasurably and because of this, she is very willing to give most things ‘a go’ and embrace life generally. The college prides itself in being a ‘Place of Excellence’ for all its students and fortunately for us they ‘walked the walk’ not just ‘talked the talk’. The senior teacher running the area of special needs, the teachers, the LSAs and the rest of the staff are to be commended for a job well done. The students were always supportive and helpful when required. Hayley will always have fond memories of her college life.

Prepared by Jenny Bottrell, Special Education Teacher, ACT Department of Education and Training

Discussion questions
1 In light of Hayley’s experiences, what do you consider to be the most important aspects of a full and inclusive educational experience?
2 Who are the key players reflected in Hayley’s college experiences?
3 Do you consider that it is easy for a parent such as Jenny to be heard in the process of educational decision-making for Hayley? Why/why not?
4 What might be the barriers and the gateways in the process of achieving full participation by students like Hayley and their families in educational systems?

DESIGNING EFFECTIVE TEACHING INTERVENTIONS

An overlay linking student learning and teaching effectiveness

An implicit theme in Narrative 5.1, and in current educational policies (see chapters 1 and 2) is the individualisation of support for all students, including those with disabilities. Although this support may be delivered in a group setting, the teacher has the responsibility of ensuring that individual goals and learning experiences are relevant and achievable. The term differentiation has emerged to describe the importance of teacher attention to the diverse learning goals and needs of students, including, in some instances, the provision of alternate or adapted assessment, curriculum and instruction (see chapter 4). Authors such as Westwood (2007) and Tomlinson (2005) have provided a wealth of sensible and practical strategies for
teachers to use in differentiated classrooms, while recognising the challenges teachers face in the context of such diversity (Keeffe & Carrington 2006; Loreman et al. 2005).

The Designing Effective Teaching Interventions (DETI) model introduced in Figure 5.5 attempts to assist teachers in reconciling the sometimes competing demands of individual needs and large class groups, and will form the basis of much of the remainder of this chapter. At each decision point, a focus question is presented as a way of highlighting the most important point for consideration by the teacher. Before turning to this framework, however, it is necessary to make parallels between this conceptual structure and a movement called ‘universal design’ that has expanded from its base in architecture toward the mainstream of educational planning and support.

The principles and practices of universal design for learning

Foreman (2009) provides a helpful review of the genesis of universal design in the world of social planning and construction. Simply put, if facilities are universally accessible to all, stigma and discrimination are reduced and participation is enhanced. The following principles are described by Foreman, based on accepted universal design for learning (UDL) principles: equitable and flexible use, simple and intuitive use, perceptible information, tolerance for error, low physical effort and the incorporation of size and space that facilitate participation by all users. All of these principles apply equally powerfully to curriculum, instruction, learning contexts and the DETI model when considered as a scaffold to the achievement of optimal learning outcomes for students. For example, we could test curriculum against the criteria for universal design: how accessible is it? Is information easily understood? Likewise with respect to instruction: are the methodologies employed able to be adjusted to address the range of needs students demonstrate in the modern classroom? Meo (2008) describes a four-step process for designing and implementing a curriculum (goals, methods, materials, assessment) that is accessible and effective for all learners and utilises innovative technologies to accommodate individual learner differences. Chapter 12 discusses the application of UDL principles to secondary school curriculum.

Like Figure 5.4, Figure 5.5 emphasises the dynamic and cyclical nature of effective teaching interventions. In such programs, assessing, planning, teaching and evaluating are integrally linked with each other in an ongoing process. In the discussion to follow, four related concepts and strategies that assist the classroom teacher in individualising and differentiating student support are introduced, along with a number of practical steps to follow in the design of programs. These concepts are:

- the identification of curriculum priorities and long-term outcome goals
- curriculum-based assessment
- task analysis
- mastery learning.

The phases outlined in Figure 5.5 should be considered in the light of this information.

**Identification of curriculum priorities and long-term outcome goals**

There are a number of possible sources for the curriculum priorities and long-term outcome goals that form the basis of class-level programming designed to include a student with additional needs. First, in the context of the key learning areas (KLAs), syllabus documents and program directions for the whole class, the teacher may identify specific areas of need for an individual student.
Figure 5.5 A model for designing effective teaching interventions (DETI)
For example, a primary school teacher may be generally aware of the difficulties experienced by a Year 5 student in the area of producing different text types, in the light of various work samples and the stages, learning outcomes and indicators described in syllabus documents and education department protocols (see examples at Department of Education, Victoria; Victorian Curriculum and Assessment Authority; and Western Australian Certificate of Education [see weblinks for these three]; NSW Board of Studies 1998a, 1998b, 1998c). The teacher may then decide to use a particular screening test to confirm this suspicion. Of course, parents may also alert the teacher to difficulties the student is having in consolidating and generalising the skills outside the classroom.

Second, the established long-term goals, often viewed as an annual target, will usually reflect the needs of students in both their current and future situations. These goals are usually expressed in the form of an individualised educational program or plan (IEP) (Bateman & Linden 1998; Bauer & Shea 1999; Rodger 1995; Schulz & Carpenter 1995). An IEP is simply a written statement of the target curriculum areas, intended learning outcomes and necessary supports for an individual, and usually involves collaborative input from the student, regular and special education (support) teachers, parents and other personnel such as counsellors and speech pathologists (Stroggilos & Xanthacou 2006). In some cases, such decisions may be the result of formal review or team meetings. In other situations, they may be agreed on more informally. Regardless of the level of formality, the IEP development and review process is an ideal platform for improving an understanding of the experiences of the learner with additional needs, including their preferences for various modes of sensory input and modes of expression. The importance of teamwork and collaboration in the design of effective teaching interventions will be reviewed later in this chapter, and was dealt with in detail in chapter 3. At this point, it is critical to note that the process of reviewing student needs and developing an IEP is a fluid yet vital part of effective planning for teaching success, and informs curricular, instructional and contextual supports for students with special needs. There is evidence of improved student learning outcomes when a plan of support is developed and implemented by a team that is unified and focused on collaboration (Hunt et al. 2003).

Regardless of the manner in which such priorities and goals are established, the classroom teacher is centrally responsible for their implementation and evaluation. Accordingly, it is vital that both regular and special education classroom teachers contribute to and support the planning processes and intended outcomes for students. The curriculum priorities and long-term outcome goals for a student with special needs may be very similar to those planned for the majority of students in the class (see the generic examples below), or they may involve modified or alternative curriculums (see chapter 4). The interested reader may wish to review sample learning outcomes from various states and territories accessible through the Australian Government’s education internet portal (see weblinks at the end of the chapter).

**EXAMPLES OF LONG-TERM OUTCOME GOALS**

- Christian will independently catch a bus to and from school.
- Justine will independently use the library to gather information about the use of augmentative communication systems in schools.
- Amy will cut along lines independently within a 2-cm boundary.
- Suzi will initiate conversations with peers in the playground without prompting.
- Ryan will be able to devise and verbally explain a mind-map to his peers.
As in Narrative 5.1, the following case study of Tom (Narrative 5.2) highlights the importance of a dynamic and collaborative approach to planning and delivering educational programs that address individual needs.

**Tom**

Tom was enrolled in a regular, mainstream primary school. He had been diagnosed with Asperger syndrome and oppositional defiant disorder. Reports indicated that Tom needed support in developing his literacy skills. By the time Tom commenced Year 3 he was identified as having a ‘behaviour problem’, and was regularly found sitting at the office waiting to discuss his inappropriate behaviour choices with the principal. Tom hated school, found class work boring and frustrating, and had found an identity for himself as the disruptive entertainer for his classmates.

In class Tom called out continually, refused to remain seated during instruction time, ran out of the classroom, climbed out open windows and refused to attempt learning activities. He was cheeky, rude and loved to make the class laugh. Tom found peer interaction challenging, and other students frequently complained that he was not taking turns, was rude or was shouting at them. He seemed to be disinterested in class-based incentives or praise and was undeterred by consequences, regardless of their severity. Diagnostic testing revealed that Tom’s ability in spelling and reading was equivalent to that of a student in kindergarten. His handwriting was illegible, and he destroyed pages in his books with scribbling, cutting and ripping.

After discussions with Tom’s mother and the learning support team, an individual education plan (IEP) was devised that supported Tom’s development socially, emotionally and academically. Tom’s teacher put in place a broad range of strategies that targeted each aspect of Tom’s IEP. Some of these strategies are outlined overleaf.

**CLASSROOM ENVIRONMENT**

Tom’s teacher created a learning environment that was structured, predictable and consistent. Changes to routine were forecast and explained. A ‘please remember’ noticeboard was created with daily notices added as a reminder of upcoming changes. A daily timetable was written on the board in coloured chalk to inform all students of what was on for that day. The school discipline policy was followed consistently, with logical, fair consequences applied when necessary. A strong emphasis was placed on assisting Tom to understand the connection between his behaviour and the outcome. Class expectations were communicated frequently and explicitly.

**SOCIAL DEVELOPMENT**

Tom found it difficult to interact with his peers in a positive manner. Tom’s teacher set aside 30 minutes of ‘quiet time’ for the class each afternoon and provided a range of structured activities, such as board games, card games, building blocks and dominoes to be used at this time. This provided an opportunity for the class teacher to work with Tom in understanding how to interact with his classmates in a positive manner. A focus on taking turns, sharing, and working through disagreements assisted Tom in developing his social awareness and understanding of how to socialise in a manner that would not upset his classmates. Tom particularly enjoyed ‘Pirate Snap’, and started to ask what he needed to do to be able to have first pick of the quiet time activities so that he could choose ‘Pirate Snap’. Tom’s teacher capitalised on his interest in this activity and used it as a motivating tool to encourage positive behaviour choices.
SCHOOL LEARNING SUPPORT OFFICERS (SLSOs OR TEACHERS’ AIDES)

In previous school years, Tom had worked with a SLSO sitting next to him in order to try and maintain his focus on learning tasks and bridge academic gaps. He had developed an extreme aversion to having any adult sitting with him, and engaged in even more inappropriate behaviour when he was supported in class in this manner. In order to avoid this conflict, Tom’s teacher worked with the SLSO to establish a program aimed at teaching Tom independent work habits and how to request assistance when he needed it. Tom was assured that whenever he was working independently he would be left alone to get on with the job. The SLSO provided valuable assistance to the class teacher by moving among the class and checking understanding while the teacher worked with other students sitting near Tom. This solution allowed the class teacher to monitor Tom’s understanding, progress and engagement indirectly while still supporting the other students in the class.

POSITIVE WORKING RELATIONSHIPS

While it took some time to build rapport with Tom, his teacher’s efforts in maintaining a positive classroom environment, using humour and remaining calm when Tom escalated his inappropriate behaviour eventually resulted in Tom and his teacher reaching a point of mutual respect and understanding. The consistency and predictability in the classroom allowed Tom to understand that his behaviour would always have a consequence. Ongoing acknowledgement of positive behaviour and maximising every opportunity to recognise and celebrate successes meant that Tom knew his efforts to make good choices would not go unnoticed. Tom’s teacher also established and maintained close communication with Tom’s mother. This connection kept Tom’s mother up to date with incidents of inappropriate behaviour and also with Tom’s positive moments at school. Sending home commendations and work samples that showed increased effort had instant effects in the classroom, as Tom began to enjoy praise and positive attention at home for his effort at school.

STUDENT INTERESTS

Tom loved animals, had a reptile licence and had several unusual pets at home, including a lizard, mice, tropical fish, a dog and a turtle. He had interesting stories of adventuring through the bush on his grandmother’s property and finding the carcass of a wild pig, poking into huge ant mounds and trying to catch eels with sharp teeth. As part of a science unit on life cycles, Tom’s teacher suggested he bring in the skull of a pig that he had found, and tell his story to the class. The class was captivated by Tom and his pig skull, and he gained increased respect and admiration from his peers. He fielded questions for days about the pig skull, and experienced entertaining his peers with knowledge and information rather than by behaving inappropriately.

CLASS WORKSHOP

While Tom made slow progress in modifying his behaviour, the class was still inclined to laugh at his disruptions and inappropriate choices in the classroom. With the support and consent of Tom’s mother, Tom’s teacher ran a workshop with the class on Asperger syndrome. The class watched a short video specifically for the purpose of teaching primary-aged students about Asperger syndrome, and then participated in a discussion about how to ‘be a good friend’ to everyone. This discussion covered strategic ignoring of inappropriate behaviour, gentle redirection when off-task, and how to give compliments and be encouraging to each other. Tom was introduced at the conclusion of the workshop as the class ‘expert’ on Asperger syndrome, and talked very briefly about the things he finds very easy at school, and the things he needs help with. Tom came up with these points himself, and one of the things he asked for help in was making good choices in the classroom. Tom’s teacher asked the class if they would be willing to be a good friend to Tom and help him make good choices. The response was a resounding yes. The days immediately after the workshop saw every student ignoring
Tom when he began to behave disruptively. Small whispered comments, such as ‘Tom, it’s time to listen’, were overheard, and without a captive audience Tom lost interest in behaving outrageously to entertain the class and avoid his work. As he saw other students receiving praise for their efforts in class, he began to want to work harder at learning new things himself.

**ACADEMIC SUPPORT**

Tom had already experienced several years of failing in the classroom. He was aware of being well behind his peers and was embarrassed by needing extra help. He reacted angrily when offered ‘easier’ work, and said he was able to do what everyone else did. The teacher started by modifying work tasks slightly to suit Tom’s ability and attention span. Activities were broken down into chunks, with each section explained again before commencing. Some activities were completed with a partner. Some activities had several options, allowing Tom to choose those that he could complete independently and confidently. As Tom gained confidence as a learner, his teacher increased the focus on Tom’s academic development. This included working on recognising sounds, building knowledge of basic sight words, practising reading books containing familiar words and phrases, acquiring and practising decoding strategies, and writing short stories using familiar and unfamiliar words. Tom began to make positive comments about school and about himself as a learner.

Continual monitoring and reflection on Tom’s progress and achievements in comparison to his identified learning goals took place throughout the year in collaboration with Tom, Tom’s mother, the class teacher and the learning support team. The individual education plan developed for Tom was an essential instrument in continually working on his targeted areas for development, and gave an excellent overall evaluation of Tom’s ongoing academic and social growth and development throughout the year. At the conclusion of the year Tom had made significant progress as a learner and was enthusiastic about school, eagerly checking the class timetable each morning and only visiting the principal to show off his pet lizard!

Prepared by Catherine Leane, NSW Department of Education and Training

**Discussion questions**

1. How important is it for teachers to identify meaningful opportunities for choice and input into learning by their students?
2. Do you consider that the form of the individual education plan devised by learning support teams is critical, or is the intent and the process of collaboration that it involves the most important issue in school settings?
3. Identify and discuss three factors in Narrative 5.2 that demonstrate how curriculum, instruction, context and student engagement in learning are connected.

Having identified appropriate curriculum priorities and long-term outcome goals for the student, the teacher uses the principles of curriculum-based assessment to design and implement a teaching program that aims for student success.

**Curriculum-based assessment**

Essentially, curriculum-based assessment (CBA) is a framework for class-level testing of student performance, and the use of this information in programming and teaching decisions. Unlike standardised testing, where individual student performance is compared against that of the wider population, the teacher who employs curriculum-based assessment effectively generates a profile of the learner in the context of the specific curriculum goals and experiences of that individual. Blankenship and Lilly (1981) have defined curriculum-based assessment as ‘the process of obtaining direct and frequent measures of a student’s performance on a series of sequentially arranged objectives derived from the curriculum used in the classroom’ (p. 81).
Several features of this definition are important to note. First, CBA is a process, rather than an isolated testing event. Second, such measures are direct and frequent, and occur in the classroom as a normal part of the teaching day. Third, student performance is considered in terms of a sequence of objectives. This implies that lesson content is analysed, and targeted student performance is clearly stated. Finally, the curriculum followed in the classroom forms the basis for assessment. Of course, these curriculums will often reflect the prescribed content set out in syllabus documents adopted for use in key learning areas. Alternatively, as discussed earlier, long-term teaching and learning goals for a student with additional needs may be derived from an individualised educational program. However, the distinguishing feature of CBA in this context is the emphasis on measuring student performance on material that is individually relevant and part of a class-level program (Blankenship 1985). Although there has been some discussion in the literature about various terminologies and areas of emphasis, for example curriculum-based measurement (CBM) as opposed to CBA (see Fuchs & Deno 1991), the use of systematic data to inform the teaching and curriculum decisions made by the teacher is one of the hallmarks of the CBA approach (Jones, Southern & Brigham 1998. For an excellent aid to developing CBA tools, see weblinks at the end of chapter).

Curriculum-based assessment, then, helps the teacher to clearly identify students’ instructional needs (see Figure 5.6) by pinpointing what the students can presently do as well as the skills and knowledge they need (Choate et al. 1995; Fuchs & Fuchs 1998; Howell & Nolet 2000; Jones et al. 1998; Whinnery & Fuchs 1992). In the following discussion, the five main steps involved in CBA are described, along with examples of the application of these procedures.

![Figure 5.6](image.jpg)
KEY STEPS IN APPLYING CURRICULUM-BASED ASSESSMENT

Step 1: Identify the scope and sequence of the curriculum

The first step in using curriculum-based assessment in the classroom is to analyse the curriculum (‘What should the learner be able to know or do?’) and sequence that information (‘What is the logical order of this content or set of skills?’). This information is often presented as a scope and sequence (or continuum of learning) chart for organisational purposes, thus allowing the teacher to organise content into a series of cumulative teaching modules or stages (see examples in Carnine, Silbert & Kame’enui 1990; Kame’enui & Simmons 1990; NSW Board of Studies 1998a, 2003; Silbert, Carnine & Stein 1990).

In a sense, the scope and sequence chart describes, at a glance, what is to be learned. While, on the one hand, it may describe in fine detail the content and ordering of a specific curriculum area, it may also reflect the broad sweep of curriculum content and coverage in schools and classes, as reflected in syllabus documents (see the weblinks at end of this chapter).

Figure 5.7 provides a simple example of a scope and sequence chart for the language skill(s) of writing simple sentences. It also emphasises three related points. First, content is broken up into a sequence of modules that are linked to each other and are not taught on a rigid timeline. That is, one module does not equal one 40-minute period. Second, learning is cumulative, with previously taught and reviewed material serving as a base for new skills and content. Finally, the visual display allows the teacher to analyse and summarise curriculum and identify skills or content that need to be further refined. This strategy is commonly referred to as task analysis.

<table>
<thead>
<tr>
<th>Modules</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2</td>
</tr>
<tr>
<td>3 4</td>
</tr>
<tr>
<td>5 6 7</td>
</tr>
<tr>
<td>8 9</td>
</tr>
<tr>
<td>10 11 12</td>
</tr>
<tr>
<td>13 14 15</td>
</tr>
</tbody>
</table>

**Figure 5.7** An example of a scope and sequence chart for writing simple sentences

Source: Developed by Paul Sleishman, Catholic Schools Office, Maitland-Newcastle
Task analysis

Task analysis, as the name implies, is the strategy of breaking down a task (or activity) into its component parts. Typically, a task will be made up of content (knowledge, concepts, facts) and strategies (what to do with the content) (Howell, Fox & Morehead 1993). A task analysis can assist the regular teacher to answer the question: 'What is involved in Student A successfully completing that task, or demonstrating that skill?' In the following example in Box 5.3, note the sequencing of steps and the role of prerequisites in the overall completion of a task.

**BOX 5.3**

**TASK ANALYSIS FOR THE USE OF A CALCULATOR TO CHECK FOUR-DIGIT ADDITION PROBLEMS**

Prerequisites: Fine motor control in order to grasp and activate the calculator, and press appropriate keys.

1. Turn calculator on
2. Read through the written problem on the sheet, including solution
3. Key in the first number
4. Press addition symbol
5. Key in the next number
6. Press addition symbol
7. Key in the next number
8. Press addition symbol
9. Key in the next number
10. Press equal sign
11. Compare totals on the written sheet and on calculator display

This type of analysis allows the teacher to view, from the perspective of the learner, the complexity of a learning task. In the example above, prerequisites, subtasks, concepts and strategies built into the task include fine motor control (computer use), numerical and operational key recognition and selection, and comparison of results when presented in two formats. Of course, it may not be necessary to analyse such a task in this way for many students in the class. In addition, such an exercise can take up a considerable amount of time. However, for a small number of students, task analysis has a wide range of applications, from the broad (‘What comprises successful grade-level writing?’) to the specific point of focus (‘What is the skills sequence for designing a basic computing program?’). It can be used for academic, social and activity skills (see discussion questions at the end of this chapter) and provides the classroom teacher with information that is useful in three phases of teaching (Kemp 1992).

First, as an assessment device, the task analysis helps the teacher to decide where, in a given activity or skill, the student is having difficulty. Second, the teacher can then pinpoint the area of need and write appropriate teaching objectives. Third, a task analysis clearly identifies the teaching sequence and allows the teacher to deliver and adjust instruction that builds on previous learning (Kemp 1992).

In practical terms, there are several ways to conduct a task analysis. The teacher may slowly perform a target skill or task, writing down each step in its logical and natural order. In this way,
the student gains a clear understanding of what is involved, including the sequential and cumulative aspects of the task. Another approach is to watch somebody else performing the skill, while recording the steps and prerequisite sub-skills demonstrated for successful completion of the task or activity. Finally, a teacher may choose to work backwards through a task, from completion to the very first step. In this way, information is gained regarding the complexity of the task, the cumulative use of skills and the chaining of one skill with the next, in a logical order. This sequencing information is especially useful when the teacher is deciding how to work on a difficult task with a student.

For example, a teacher may be working with a student on the activity of accurately cutting along a line. It may be appropriate to commence by focusing student effort on the very last step of the task (the student independently cuts for the last 2 cm, having been assisted with the earlier tasks of grasping the paper, coordinating the scissors and so on). Gradually, and dependent on student performance, the student is encouraged to attempt more of the steps in the task, in reverse order, as their success and confidence develops. Referred to as ‘backward chaining’, this strategy is a simple and effective use of the principles of task analysis. There are many other variations of this approach, including forward chaining (working forward through a task, providing assistance at the first point of need) and completion of the whole task, with teacher support on any and all areas of difficulty. The interested reader is referred to an excellent paper by Carter and Kemp (1996) that reviews the different types of task analysis and outlines the implications of a task analytic approach to assessment, planning and teaching approaches relevant to the education of students with and without disabilities.

This section has discussed the integral role of curriculum analysis as the first step in curriculum-based assessment and introduced the strategies of individual education plans (IEPs), scope and sequence charts and task analysis. The next step in the process is to gather specific information on student performance within the curriculum.

**Step 2: Assess the current performance level of the student on the curriculum**

In Figure 5.8, three levels of assessment are described in the context of learning processes and outcomes. Level 1 reflects aspects of student performance that are considered daily. Level 2 introduces key considerations for the teacher in the medium term, while Level 3 is concerned with the larger timeframe and the overall relevance of curriculum and learning for the individual.

In reality, teacher assessments of student performance and needs combine elements of Levels 1, 2 and 3. However, in terms of daily programming, Level 1 is the natural starting point. The teacher is concerned with gaining a picture of student ability in terms of the curriculum content being covered in the class, sometimes referred to as a pre-test or baseline. As noted earlier in this chapter, and in chapter 4, these curriculums may be drawn from a vast array of subject areas, may involve modified or enhanced content and follow a set of objectives outlined in an IEP.

An important point to be considered here is the level of observed student engagement with the curriculum. Assessment by the teacher should be complemented by student self-assessment wherever possible, in order to maximise the degree to which students ‘own’ their learning.
Astute teachers use a range of information sources, including student input, to guide their choice of topics, preferred learning materials, strategies and instructional approaches and, as we note a little later, they regularly evaluate the student’s response to intervention in order to continuously adjust instructional design factors.

**What to assess**

Notwithstanding the diversity of curriculums on offer in classrooms, the teacher is particularly interested in two related dimensions of student behaviour: the process (*how* the student performed the task) and the outcome (*how well* the student performed the task) (Figure 5.8). In the first area, the learning process, task analysis should be considered as a useful means of describing student performance. Two alternatives should be considered: first, devising a task analysis prior to the lesson and noting how a student performs in relation to this sequence; and, second, observing the process followed by the student, recording the sequence of steps and the specific areas of difficulty. The observation of the process allows the teacher to analyse errors and pinpoint areas for remediation (Gable & Hendrickson 1990; Szarkowicz 2006).

In the second area, learning outcomes, the teacher collects information about individual performance in terms of designated behaviours (e.g., putting hand up to speak) or permanent products (e.g., number of correct simple sentences written in one minute). One useful way to consider the quality of student learning outcomes is to evaluate the stage of learning the student appears to be functioning within for that task or area. These stages are often described as the phases of acquisition, fluency, maintenance and generalisation (Figure 5.8). In the **acquisition phase**, the student is learning how to do the task and so is, of necessity, building up speed, confidence and understanding. **Fluency phase** refers to the use of a skill or content quickly and efficiently. In the **maintenance phase**, the learner retains the skill over time, while in the **generalisation phase**, the skill or content is adapted to suit new needs as they arise (Alberto & Troutman 2006; Snell & Brown 2000). For example, a common way for a teacher to assess student fluency of a skill is to count how many maths facts or sight words a student is able to recall in one minute (see chapter 9). In contrast, another teacher may be interested in the number of times a student independently perseveres in a conversation with peers in the playground. The nature of the task, then, will determine how such assessment is carried out.

**How to assess**

Teachers assess student performance in many ways, depending on the skills or content being considered and a range of other factors, such as the amount of time and the level of teaching support available. Some of the most common methods are:

- pencil and paper tests
- informal work samples that serve as indicators of skill development
- portfolios – a collection of student work over a period of time
- checklists
- running records, in which the teacher writes down as much as possible about student performance as it occurs, typically as a continuous description
- systematic observational records
- rating scales.
On many occasions, teachers use several sources of information in order to fully assess student behaviour, as illustrated in Box 5.4. This assessment information is then used to establish specific teaching objectives.

Having gathered appropriate classroom-level assessment information, the teacher turns to the task of establishing specific performance objectives in the area. This becomes Step 3 in the curriculum-based assessment process.

On many occasions, teachers use several sources of information in order to fully assess student behaviour, as illustrated in Box 5.4. This assessment information is then used to establish specific teaching objectives.

Having gathered appropriate classroom-level assessment information, the teacher turns to the task of establishing specific performance objectives in the area. This becomes Step 3 in the curriculum-based assessment process.

Mr Pascoe, Year 10 English teacher, was concerned about Julie’s skills in the area of reading comprehension. In group work, Julie appeared to be heavily reliant on other students for answers to questions requiring direct recall, and was totally nonplussed when required to evaluate even short passages of text. When Mr Pascoe was able to hear Julie read a sample piece of text on her own, it soon became obvious that the student was unable to extract meaning from the print because of her slow rate of reading. Further testing using a common sight word list and primary school readers confirmed that Julie was three years behind her peers in overall reading rate and sight vocabulary. This explained her lack of confidence and dependence on others in reading comprehension tasks.
Step 3: Establish short-term instructional objectives for the student(s)

Having analysed the curriculum and assessed student performance within it, the next step for the teacher using curriculum-based assessment is to program for student progress. By developing a series of **short-term instructional objectives** that reflect the specific learning needs of the individual, ensuring that small progress steps are built in and regularly checking the quality of student performance, the teacher is using the principles of mastery learning (Bloom 1980, 1984).

**Mastery learning**

The teacher using mastery learning seeks to avoid student failure on the curriculum by allowing adequate time for the individual to master the target content, and ensuring that formative, ongoing assessment is used to guide teaching decisions and support given to the student, including corrective instruction as appropriate (Bloom 1980, 1984). At the heart of a mastery learning approach is the principle that only small amounts of new information should be taught and that the student should not be introduced to more complex skills or content until the criterion for mastery of earlier work has been reached. In the example below in Box 5.5, the value of careful curriculum analysis and the introduction of mastery learning principles is highlighted with reference to the language skills of a Year 8 student, Justin. Following this example, the development of short-term instructional objectives for use in the regular classroom is discussed.

**Box 5.5**

Justin has been struggling in Year 8 mathematics for some time and class-level assessment has indicated the need for specific work in the area of algebraic addition and subtraction tasks and written story problems involving these calculations. Justin has received teaching support in the form of individualised instruction, peer modelling and worksheets, enabling him to successfully identify the various types of number tasks when presented in written or oral form. Before moving on to the strategy of story problem writing (including deriving numerical concepts from text and speech), Justin must independently achieve 80 per cent correct on three consecutive sets of tasks that involve the skill of writing or stating simple number sentences comprising an algebraic addition or subtraction. Justin’s confidence has increased markedly as a result of the opportunity to master these basic numeracy skills.

**Designing short-term instructional objectives**

In order to be able to carefully monitor student progress and change teaching and learning programs as necessary, a very clear statement of intended student performance can be designed (see Alberto & Troutman 2006 for further information on this aspect of programming). As noted in the overview of mastery learning, progress is then measured against this objective, allowing the teacher to make informed decisions about whether, for example, to introduce the next skill in the sequence (or section of content) or, alternatively, to revise student understanding and application in the present area.
Short-term instructional objectives (sometimes referred to as teaching, performance or behavioural objectives) should reflect small progress steps for the student based on the performance information gathered in the class-level assessment phase. As demonstrated in the two examples that follow, these very specific statements of intended student performance have four features, expressed in a variety of ways (see Alberto & Troutman 2006).

This example describes an academic skill that is important for Paul, identified from direct assessment of his classroom behaviour and a curriculum sequence. Many teachers write similar objectives for social behaviour, as demonstrated in the next example (Alberto & Troutman 2006; Arthur-Kelly et al. 2007). Note that the following example relates to the performance of the whole class, rather than an individual student.

Class 4H, on hearing the teacher’s request for silence, will be sitting quietly without noise within 10 seconds on five consecutive occasions.

The short-term instructional objective is a precise statement of expected student performance, based on what the students can do and need to be able to do. It does not, however, specify how to teach students. The next section introduces the important topic of instructional strategies (Step 4), as a means of assisting students to achieve targeted levels of performance.

**Step 4: Introduce effective instruction**

In this section, an overview of several instructional strategies is presented. Further material on teaching strategies is presented in later chapters, and the reader is directed to the sources listed at the end of this chapter for more detailed information. Books by Westwood (2007), Kame’enui et al. (2002), Henley, Ramsey and Algozzine (2002) and Mastropieri and Scruggs (2004) may be especially useful in this context. It is important to emphasise that the established principles of instructional delivery and support (Figure 5.2), discussed earlier in this chapter, provide a necessary framework for the successful introduction of more specific teaching strategies. That is, the effective teacher continually evaluates the impact on the learning processes and outcomes achieved by students of factors such as reinforcement and prompts, along with the effectiveness of particular approaches, such as those described in the following section.
The techniques described below represent examples from a wide range of strategies teachers may select and use in classrooms. In fact, the strength of a model such as designing effective teaching interventions (DETI), based on the principles of curriculum-based assessment, is the emphasis on active review of programs and the opportunity for changes in the light of student progress, including the selection of new teaching methods when others are not effective. Teacher preferences, communication styles and the levels of additional support available are examples of the factors that may influence a decision to use a particular approach. In addition, as highlighted in many of the suggested readings, particular curriculum areas lend themselves to certain instructional methodologies. The aim of a programming overlay such as DETI is to provide the teacher with a means of effectively designing and delivering teaching and learning programs that maximise student outcomes by enhancing the learning process. The selection of appropriate teaching strategies is an important step in this process. As we note in the following discussion, it may well be necessary in some situations to systematically combine strategies in order to optimise student engagement and learning outcomes (Copeland et al. 2002).

Cooperative learning

Cooperative learning strategies (sometimes referred to as team learning methods) have been the subject of much research and discussion over the past few decades (Jenkins et al. 2003; Nelson, Johnson & Marchand-Martella 1996; Putnam 1998; Slavin 1996; Yamanashi 2005). Using a problem-solving focus, students with a range of ability levels work together to achieve learning outcomes through a process of planned interdependence. Rewards can be based on individual or group changes in performance, and many variations on the basic theme, such as Jigsaw, Student Teams Achievement Divisions, and Think-Pair-Share, have been developed. (For a practical discussion of the key aspects of several models and a range of instructional considerations when using cooperative approaches, see Goor & Schwenn 1993. For a more recent analysis of teacher perceptions about the use of cooperative learning techniques, see Jenkins et al. 2003.)

Cooperative learning has a great deal of potential for promoting the inclusion of students with additional needs, with an emphasis on the social process, positive learning outcomes and relevance to a wide variety of student needs highlighted in current literature (Gillies & Ashman 2000; Piercy, Wilton & Townsend 2002; Putnam 1998; Yamanashi 2005). However, cooperative learning is considerably more than simply placing students into groups and providing a task for them to complete. For example, Goor and Schwenn (1993) emphasised the importance of preparing students for cooperative learning, including the clear definition of roles, and monitoring progress closely as the group works together. In one study, Jenkins et al. (1994) discussed the role of group dynamics (e.g., establishing before the activity, as far as possible, which students will be compatible) in the successful introduction of cooperative learning strategies in the classroom. While this method may have a great deal to offer, then, in terms of promoting student acceptance of individual differences and improving student learning outcomes, the time involved in carefully structuring and overviewing such a program may be regarded by some teachers as a limitation to its practical use in schools and classes.
Peer tutoring as one example of peer-mediated approaches

Figure 5.9  Peer tutoring can be same-age or cross-age

The involvement of peers in some form of instructional arrangement has burgeoned in the past decade and is often referred to as the peer-mediated range of strategies (Utley, Mortweet & Greenwood 1997). One example, perhaps most commonly known and used by teachers, is peer tutoring. As the name suggests, peer tutoring is a general descriptor for teaching strategies that involve one student helping another with specified content or tasks. Typically, these may be referred to as same-age or cross-age tutoring arrangements (see Figure 5.9). In the first type, the tutor is usually in the same age-bracket (or class) as the tutored student(s), while in cross-age tutoring, the tutor is older than the tutee. The tutor may have several roles, including modelling, explaining skills or content, and encouraging the tutored student(s), and so training and monitoring of the tutor is an important issue for the supervising teacher. (For an excellent discussion of several critical considerations in the effective use of peer tutoring and peer-centred strategies, see Jenkins & Jenkins 1985, 1987; Topping & Ehly 1998. For an overview of peer-mediated approaches, including peer tutoring, see Utley et al. 1997.) Tutoring may produce important affective and skills-based improvements for both the tutor and tutee (Utley et al. 1997), and promote the achievement of individualised support in inclusive settings (Jenkins et al. 1994; Rose 2008). As noted earlier, teachers may decide to combine strategies in order to best meet the needs of their students. In one study, Spencer, Scruggs and Mastropieri (2003) utilised peer tutoring with strategy instruction in the skill of summarising paragraphs. They found that not only did the targeted students with emotional or behavioural problems enjoy this format when compared
with more traditional lesson types, but they demonstrated important improvements in their on-task behaviour and their achievement in some content testing.

Like all teaching strategies, peer tutoring has several potential strengths and weaknesses. One of the major contributions of the approach is the use of peers as an additional instructional resource, providing an opportunity for individualised student practice and skill development. On the other hand, peer tutoring may only be suitable for certain curriculum areas or topics and can be overly demanding in terms of preliminary student training as well as ongoing teacher monitoring. Teachers who plan to use peer tutoring should explore the tutor training aspects associated with the strategy in order to avoid the problem of tutees practising errors or diverging off-task due to poor tutor support.

**Cognitive and metacognitive approaches**

Teachers play a central role in facilitating and supporting the cognitive (‘thinking’) and metacognitive (‘thinking about thinking’) processes taking place in their students. To this end, approaches such as process-based instruction (Ashman & Conway 1993), reciprocal teaching (Palincsar & Herrenkohl 2002; Palincsar & Klenk 1992) and strategy training (Deshler et al. 1996; Deshler et al. 2001) have received increasing attention in the research and practice literature. Deshler et al. (2001), for example, discussed a series of intervention levels for teachers working with secondary students who are experiencing problems in mastering content-area reading. They explored various means of maximising instructional resources at the system, school and class levels, as well as the importance of tapping into and enhancing the information processing experiences of students (Deshler et al. 1996; Lenz 2006). In other words, in addition to maximising daily learning outcomes, teachers using approaches such as strategy training (and other similarly focused cognitive and metacognitive techniques) should try to empower students with a learning framework that can be used independently and in a generalised manner. The goal of this form of intervention is to assist students to make connections among the skills, knowledge and concepts they learn, and to be able to independently tackle new and challenging tasks in school and beyond. Examples of these strategies include overt and covert self-instruction, monitoring, evaluation and reinforcement (Agran et al. 2003). In reciprocal teaching, similarly, students are encouraged to use a series of steps to tackle the meaning in texts they are presented with, by questioning, summarising, clarifying and predicting (Palincsar & Herrenkohl 2002; Palincsar & Klenk 1992).

**Self-directed learning**

The development of student autonomy and independence in learning is perhaps the most important and noteworthy aspect of the many cognitive and metacognitive approaches to instruction discussed above. In a similar vein, self-directed learning, as the name implies, is the provision of opportunities for the student to explore knowledge in their own way and at their own speed. The teacher may use some form of contract to encourage student completion of particular tasks or modules, and could assist the student to identify different means of accessing information, including the internet (see information on computer-assisted instruction below). Teachers may have a highly facilitative role initially, or they may need to provide more structure and then withdraw. For example, depending on the ability of the student(s), teachers may identify a very broad topic and ask the student to brainstorm component aspects for subsequent study. Alternatively they may provide a problem that requires a solution as a framework for the
investigation of relevant sources. Without doubt, the motivational benefits of such an approach are the most appealing reason for a teacher to utilise self-directed learning. Clearly, maturational factors play a large part in determining whether an individual can responsibly complete such tasks with scaffolded support from the teacher, and so, like any other teaching approach, constant monitoring of student engagement is vital for success.

**Direct instruction**

Direct instruction (DI) involves highly structured and explicit teaching of content and strategies to students, using similarities and differences between examples as a central instructional tool (Darch 1990; Engelmann & Carnine 1982; Kinder & Carnine, 1991; Shippen, Reilly, & Dunn 2008). The teacher using DI employs specified prompt and reinforcement techniques, curriculum analysis and the principles of mastery learning to promote student learning. Teachers who use the materials based on this approach (e.g., *Reading Mastery* 1 by Engelmann & Bruner 1988) are expected to deliver scripted cues and instructions to their students and make regular program decisions in the light of individual performance levels and established criteria.

DI places a great deal of emphasis on the clear transmission of information to the learner, and student success on the learning tasks (Gersten 1992). These points, coupled with a strong research base indicating the effectiveness of the approach (Darch 1990; Darch et al. 2006), have contributed to the popularity of DI materials and techniques in many areas. On the other hand, the focus on teacher direction and the careful structuring of content and lesson delivery has also attracted criticism. Heshusius (1991), for example, critically analysed the fundamental assumptions of curriculum-based assessment and DI, suggesting that, among other concerns, the over-emphasis on measurement in these models may detract from the validity of learning outcomes for the individual. Clearly, DI continues to evoke controversy, both in terms of how it is used and the principles on which it is based. Perhaps, as Gersten (1998) notes, explicit instruction, of which DI is an example, is best viewed as part of an array of instructional approaches that teachers can call on in order to maximise student engagement, cognition and retention of critical skills and knowledge.

**Computer-assisted instruction and technological supports**

The role of computers in educational programs is ever-changing, as technology opens new doors, and access to hardware, software and peripherals improves (for a detailed discussion of this area, see Burtch 1999; Lankshear, Snyder & Green 2000; Mull & Sitlington 2003). In addition to providing augmentative and alternative means of communication for students with severe physical or intellectual disabilities (Hustad, Morehouse & Gutmann 2002), computers and computer programs can be used to enhance and support teaching and learning programs in a multiplicity of ways. The potential roles and contributions of computers and other technologies in instructional programs may include improving student attention to and concentration on tasks, individualised practice and drill opportunities, improved levels of motivation, and enhanced thinking and problem-solving skills in core areas such as grammar as well as specialist subject areas (Lacina 2005). Of course, the quality of peripherals such as scanners, digital cameras and videos and relevant instructional software (Higgins, Boone & Williams 2000) will determine the degree to which technology supports make a positive and sustained impact on student learning and participation. However, it is fairly self-evident that computers cannot replace teacher-directed instruction, given the constant need for teacher explanation of concepts,
linkages to previous and new materials and the complex levels of information processing exhibited by students in classrooms every day. Researchers continue, however, to explore ways in which computers can support and maximise individual learning processes and outcomes in various educational and political contexts (Gibbons 2006).

As indicated in Figure 5.5, after appropriate teaching strategies are selected, the next step in the design and implementation of effective teaching interventions involves the systematic and frequent review of program effectiveness and student outcomes.

**Step 5: Actively monitor student progress and adjust program features in the light of progress information**

The effective classroom teacher is constantly reviewing student progress and fine-tuning teaching programs in order to maximise student participation and learning outcomes. The use of ongoing monitoring procedures, such as observational records, work samples and the development of portfolios (discussed earlier), allows the teacher to decide whether specific instructional objectives have been attained. For example, the support documents for literacy and communication in the English K–6 syllabus (NSW Board of Studies 1997a, 1997b) and other more recent syllabus documents identify a wide array of indicators of student learning in relation to specific student outcomes. (For useful sources relating to monitoring procedures in early childhood education, the reader is referred to Schwartz and Olswang 1996, as well as Szarkowicz, 2006). Alberto and Troutman (2006), and many other special education textbooks, provide excellent examples of monitoring forms, and many teachers find that it is easiest to adapt an existing format or to design one to meet their particular needs.

In the past few years, the term Response to Intervention (RTI) has emerged out of the recognition, especially in the context of American disability legislation, that every instructional moment and opportunity counts, and that programs need to be carefully tracked for effectiveness in terms of student learning outcomes. If, for example, a student is struggling and appears to be at risk of failure, resources need to be employed to scaffold changed instructional supports and enhanced opportunities for optimal progress (Fuchs & Fuchs 2006). This approach to increasing student engagement and achievement is entirely consistent with the principles and strategies of mastery learning and curriculum-based assessment discussed in this book and elsewhere (Keen & Arthur-Kelly 2009). See Box 5.7 for an example of RTI.

Mrs Brotherton was concerned to monitor the conversational turn-taking behaviours of Sam, a boy with severe intellectual disability in her Year 1 class, when working in paired activities. With 25 students in her class, the most practical method was the incidental use of anecdotal records during observations as the whole class set about tasks from various subject areas. It soon became apparent that the target student tended to respond to his partner, but rarely initiated interactions. Mrs Brotherton decided to provide Sam with specific modelling to emphasise the importance of leading into a conversation, as well as helping his peer to delay initiating on some occasions to allow Sam enough time to start the process of interaction.
On the basis of information gained from observations, the teacher may decide to introduce a new or revised student objective, conduct a further task analysis of the skills or content to be learned, change the teaching strategies employed or cancel the program. Table 5.1 provides some examples of common program changes made in the light of progress information.

Table 5.1 Typical program changes

<table>
<thead>
<tr>
<th>Progress information</th>
<th>Program change</th>
</tr>
</thead>
</table>
| Student struggling to achieve short-term instructional objective | Revise objective  
Review instructional methods  
Conduct further task analysis of the target skill |
| Short-term instructional objective achieved                | Identify new objective in light of skills sequence and task analysis |
| Long-term goal achieved                                    | Establish new long-term goals  
Monitor mastered skills |
| Student appears to be bored with task                      | Review objective for mastery  
Evaluate instructional methods and change if necessary |

SYNTHESIS

The DETI model introduced in Figure 5.5 raises many issues related to the design of effective teaching interventions, and in the limited space available it has been possible to introduce only key ideas and strategies. The reader is strongly encouraged to follow up the suggested reading at the end of the chapter, all of which extend the basic concepts introduced above. The following case study (Narrative 5.3) exemplifies many of the key elements raised in this chapter and emphasises the importance of teamwork in the design, implementation and ongoing evaluation of individualised educational programs for students with additional needs. This case study also demonstrates that inclusion is not an ‘all-or-nothing’ matter. Some special school and special class settings can still have a focus on inclusion to ensure that their students are, as far as possible, part of regular society. A major theme to emerge in Narrative 5.3 is the importance of effectively involving other personnel when planning and delivering class-level support – an issue that is now briefly considered.

Involving other personnel in teaching and learning programs

A look around any school will quickly illustrate the number and range of people who are involved in some aspect of the school community. The challenge for the teacher who is setting out to address the varied needs of the students in a regular classroom is to effectively match the people available, including parents and other students, to the teaching and learning plans and programs on offer (Hunt et al. 2003). One major issue is the need for cooperation and collaboration, discussed in detail in chapter 3 of this book. Another aspect relates to the time that is needed to adequately train support people in the teaching strategies being used, such as peer tutoring (discussed earlier). The complex issues relevant to the wider involvement of people in your classroom, including aides, parents and volunteers, are discussed in several sections of this book, including chapters 3, 10, 11 and 12.
Inclusion in a New Zealand secondary school

Students in New Zealand schools can attend their local school or school of their choice, regardless of their level of ability. There are a number of different options available for students with special needs, although attending mainstream schools and classes is mostly advocated to parents as the best option.

Students with disabilities can apply for specialist support and there are many schemes available to try to obtain assistance, such as Ongoing and Renewable Resource Scheme (ORRS) for students with significant and, as it suggests, ongoing needs. There is a resource teacher for learning and behaviour (RTLB) available for teachers to access in clusters of schools, where students and teachers receive support for a short period of time. There are supplementary learning support (SLT) and reading recovery teachers available for students with particular learning needs. These roles usually encompass a small amount of specialist teaching time and some students can apply for teachers’ aide time. There are also some Schools for Specific Purposes (SSP), which may have satellite classes in local schools as well as support units within schools where they come under the umbrella of the mainstream school, rather than the special school.

The concept of inclusion at the secondary level poses many different issues to those at primary schools. Secondary schools operate on timetables where classes change frequently, students move about the school and the level of expected outcomes from students is increasingly demanding. Students generally have compulsory core subjects then option classes, which can be chosen to meet student’s interests and talents. There are many teachers involved in a secondary student’s life (see also chapter 12).

Working in a unit for students with special needs within a secondary school, it has become apparent that inclusion at this level needs to be thought of in many different ways.

It is also necessary to consider that secondary school is the step leading into independent living, so needs to be a place to foster increasing independence.

Student IEPs are written using the same key competencies as the mainstream student assessments. These include Thinking, Relating to Others, Using Language, Symbols and Texts, Managing Self, and Participating and Contributing. These enable student goals to include learning in all areas of development, moving in steps to suit individual need. They also encompass the extremely important goals of working cooperatively with others, leading to being valuable members of society. With this in mind, some students are able to attend option classes for subjects such as art, drama, fabric and metal work, with support from a teachers’ aide. Modification of the program is sometimes achieved and for many students, social experiences are the goal.

However, for some students, such as those with ASD, moving about a large school with lots of big students can be quite terrifying. Some students with multiple disabilities or challenging behaviours may have their individual needs and safety concerns met better within a small and monitored environment. Inclusion for these students works better when, as a group, all students attend whole-school events, such as assemblies and athletics days. The class also attends library sessions, uses the school gym and computer suites. Mainstream students coming to the special needs unit is also another way of looking at inclusion in a school community. For example, Year 9 leaders participate in a lunchtime program of visiting the classroom to ‘hang out’ with the students, listening to favourite CDs or going for a walk in the playground. By involving the younger mainstream students, they are introduced to the students with disabilities, can ask questions and pass on information to their
peers. Students are quite accepting of others’ needs if they are given the opportunity to ask questions and are given honest information.

Inclusion for secondary age students must also be looked at in terms of inclusion in the local community. For mainstream students this includes part-time jobs/work experience, sporting teams in playing and coaching roles and many volunteer and leadership positions. Students with special needs also need opportunities to participate in community events at appropriate levels of involvement. Some of the programs currently on offer to these students include swimming lessons at the local pool with instructors, Riding for Development (RDA), work experience, Special Olympics events and music and movement classes.

Within the special needs unit, many programs and opportunities exist for the student to achieve personal goals and strive for independent living skills. Therapists are able to visit, assess and work with teachers and students for their specific learning needs. Group work is encouraged and social skills are taught in many different ways. Specific programs include cooking, sensory exploration programs, leisure skills such as art, sewing, scrapbooking, as well as functional literacy skills tailored to meet individual needs with life skills as the main focus.

By the time students with special needs enter secondary school, they have usually experienced years of intensive literacy and numeracy programs. The belief in our special needs unit is to provide the students with the skills to live as independently as is possible for each person. It is also to provide vocational opportunities for students to discover personal likes and strengths. To do this, we need to be continually trialling ideas and evaluating outcomes in many and varied school and community programs.

The students in our unit are happy, they have peers to go places with on the weekends and they are becoming confident people who can participate in a wide range of events. We need to be continually mindful of the many opportunities for learning that are available within a school day. Our older students are becoming amazing role models for the younger, newer students and their ability to influence the younger student’s behaviour is often much more effective than an adult’s intervention. This is another example of effective inclusion within a school – positive peer group pressure within our special needs unit!

Successful inclusion at the secondary level looks like many different things. Effective programs are greatly influenced by your and other people’s ways of thinking.

- Communicate your ideas with the principal and classroom teachers. Provide information about the students, support for modifying work and feedback after students attend class. For some teachers, this could be their first experience teaching a student with significant special needs.
- Have realistic expectations of what students are going to achieve by attending mainstream classes.
- Encourage parents to think carefully about their child’s needs – have them attend a class with their child to see if it will meet their needs and expectations.
- Empower mainstream class teachers to get to know the student with special needs and modify the class work.
- Ensure teachers’ aides encourage independence in students. Stand back and let students learn from having a go and being involved with the other students – make them speak for themselves.
- Consider inclusion on many different levels. Many core learning strands are best learnt in an environment tailored to student level of development.
- At all times, consider individual student needs.

Prepared by Michelle Pointon, Tauhara College, Taupo

Discussion questions

- What do you believe to be the key indicators of good leadership in inclusive schools?
- How important is planning for the future in curriculum and instruction provided to secondary students with additional needs?
- Discuss the pivotal role of peers in shaping student expectations of and experiences at school.
Summary

This chapter has provided an introduction to several important programming and teaching strategies that allow the involvement and inclusion of all students into the learning environments of the local neighbourhood school. The practical questions of what to teach and how to teach were discussed, along with some aspects of classroom management relevant to effective program implementation.

Some of the key principles and approaches relevant to the design of individualised teaching interventions, including curriculum-based assessment, mastery learning and task analysis, were discussed in the context of a model designed to foster student success by exploring aspects of assessment, programming, instruction and evaluation. A number of narratives highlighted the ways in which all students can be active participants in classrooms based on effective teaching and learning principles and strategies.

The following chapters continue to explore the practical aspects of class-level support for and inclusion of students with additional needs. In chapter 6, a range of approaches in the development of pro-social participation by students is explored, with emphasis on the purpose and contexts of behaviour. Chapters 8 and 9 provide an overview of the problems commonly experienced by students in the areas of literacy and numeracy, and specific instructional strategies that target these basic skills are introduced and discussed. Although these approaches are particularly relevant to programs of support for students with learning difficulties, they may be used effectively in the design and implementation of teaching and learning programs for all students. Chapters 10 to 12 focus on the implementation of inclusive teaching strategies at early childhood, primary and secondary level.

Discussion questions

1 What are the potential constraints and advantages of continuously monitoring program and student outcomes? Reflect on the instructional cycle presented in Figure 5.4 before you answer.
2 Is it possible to design curriculum that is universally relevant and accessible for all students? What is your view of the National Curriculum in Australia in this respect?
3 How useful is the strategy of task analysis for the regular classroom teacher? What are the possible applications and problems associated with this approach?
4 How does the concept of mastery learning differ from other approaches to classroom assessment, programming and instruction, such as outcome-based education?
5 How can the classroom teacher involve other personnel in programs designed to optimise learning outcomes for all students? What are some difficulties and some benefits that may be encountered by a class teacher when attempting to collaborate with parents and other partners in the educational field?
6 On the basis of your reading and experience, are there particular teaching strategies that may best assist in the participation and inclusion of students with additional needs in the regular classroom? If so, what are they and how can they be implemented most effectively?

Individual activities

1 Select a unit of work in your area of specialisation and design a scope and sequence chart for it, perhaps using Figure 5.7 as a guide. How can this exercise assist the classroom teacher in the task of planning and delivering teaching programs?
2 Identify an everyday activity, such as catching a bus, brushing your teeth or making a cup of coffee. Using one of the strategies discussed earlier in this chapter, task-analyse the activity, writing out each step in a logical sequence. As a follow-on activity, conduct a similar analysis for an academic task, such as the early reading skill of sounding out and blending words.
3 Visit www.interventioncentral.org and browse the vast resources available there to assist you in maximising effective teaching and learning in your classroom.

4 Using one of the narratives presented in this chapter (5.1, 5.2 or 5.3), along with your reading and experience to date, identify five issues that are of particular importance for the classroom teacher who is aiming to include and support a student with additional educational needs in daily teaching and learning programs and activities.

5 Visit one or more of the following websites and navigate around the various technology-focused resources and links. How will the information you find in these sites assist you in enhancing the inclusion of all students in your classroom?
   - www.library.jcu.edu.au/Educ/special.html
   - www2.edc.org/NCIP/library/toc.htm
   - www.abilityhub.com

Group activities

1 Identify and discuss ways in which particular aspects of curriculum, instruction and features of the learning context (Figure 5.2) play a role in the provision of effective teaching and learning programs that are inclusive of all students.

2 Read the following article and discuss the arguments for and against a constructivist model of teaching in relation to the inclusion of students with additional needs.
   Why has special education traditionally focused on the use of explicit and systematic teaching approaches?

3 Identify a hypothetical student and develop some examples of long-term goals and short-term instructional objectives in a relevant curriculum area. How could you monitor individual progress towards these targets, given that you may have 30 other students in your class? Design a method (that is practical for you) of tracking and evaluating student learning outcomes in your selected curriculum area.

4 Design and implement either a peer tutoring or cooperative learning procedure, such as Jigsaw. Discuss the strengths and constraints of the techniques(s) you trial.

Search me!

Explore Search me! education for relevant articles on planning effective teaching strategies. Search me! is an online library of world-class journals, ebooks and newspapers, including The Australian and The New York Times, and is updated daily. Log in to Search me! through www.cengage.com/sso using the access card in the front of this book.

KEYWORDS

Try searching for the following terms:
► curriculum-based assessment
► task analysis
► teaching strategies
► universal design

>> Search tip:
Search me! education contains information from both local and international sources. To get the greatest number of search results, try using both Australian and American spellings in your searches, e.g. ‘globalisation’ and ‘globalization’; ‘organisation’ and ‘organization’.
Weblinks

- Australian Government’s education internet portal
  www.education.gov.au/goved/browse/0
- Department of Education, Employment and Workplace Relations: Inclusive instruction for Indigenous students
  www.whatworks.edu.au
- Department of Education, Victoria
  www.education.vic.gov.au
- Developing curriculum-based instruction tools
  www.lefthandlogic.com/htmdocs/tools/cbaprobe/cba.shtml
- Ministry of Education, New Zealand
  www.minedu.govt.nz/NZEducation.aspx
- NSW Board of Studies
  www.boardofstudies.nsw.edu.au
- Queensland Department of Education and Training
- South Australian Department of Education and Children’s Services, Learning to Learn
  www.learningtolearn.sa.edu.au/learning_workroom/
- Victorian Government’s Curriculum and Assessment Authority
  www.vels.vcaa.vic.edu.au
- Western Australian Certificate of Education

Internet-based instruction learning websites

- Auburn University, Alabama, Department of Rehabilitation and Special Education
  www.auburn.edu/rse/teachertips/
- Pearson Digital Learning
  http://nclb.pearsonedtech.com
- Plato Learning
  www.plato.com
- The Renaissance Group Inclusion Strategies website
  www.uni.edu/coe/inclusion/strategies/index.html

References


*Recommended reading for this chapter

Further recommended reading


