CHAPTER FIFTEEN

PARENT INVOLVEMENT

Parents play important, if not critical, roles in educating and supporting SWSEN. They are first and foremost parents, with all the rights and responsibilities of that role, but they are also sources of information, partners in designing and implementing programmes for their children, and 'consumers' of education (Hornby, 2000). Parents have played and continue to play a critical role in advocating on behalf of their children for better educational services. One of the earliest advocates of family involvement in rehabilitation and special education, Dybwad (1982) recounted how parents of children with mental retardation banded together in many countries during the 1940s and 1950s to demand justice for their children and an end to discriminatory practices.

15.1 The Story So Far

So far in this review, parents have been mentioned in a range of contexts. In brief, the following comments have been made:

- Educators should create collaborative relationships with students and their families, by recognising parents/family members as valuable partners in promoting academic progress and by working with them from a posture of cultural reciprocity (Chapter Four).
- The strong focus on disability, difference and deficit is upsetting for parents and has deleterious effects on inclusive culture and practice (Chapter Seven).
- Parents should be involved in the decision-making processes in Response to Intervention (Chapter Five and Chapter Fifteen).
- Many parents of SWSEN do not have the knowledge, skills and contacts to comprehend an increasingly deregulated system (Chapter Six).
- The coexistence of inclusive education provisions and special schools (which is the case in almost every country) suggests that choices must be exercised as to where SWSEN are ‘placed’. In this process, the relative weight given to the preferences of

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33 This chapter draws on Mitchell (2008, chapter7) and Mitchell et al. (2010), as well as other sources mentioned in the text.

34 The term 'parent' encompasses a range of people, including natural parents, adoptive or foster parents, guardians, extended family, carers and caregivers. Here ‘parent’ will be used to cover all categories of such relationships.
SWSEN and their parents and those who administer education systems constitutes a major point of tension (Chapter Six).

- Subsidiary issues centre on how parents negotiate any choices that are at least nominally available to them and how they can be assisted to make informed choices (Chapter Six).
- In countries where funds are tied to individual children, there is more evidence of strategic behaviour by parents and teachers to secure resources (Chapter Seven).
- Voucher-based funding models provide a direct public payment to parents to cover their child’s public or private school costs. The payment can be made either directly to the parents or to a school on behalf of the parents. The aim of these models is to increase parental choice and to promote competition between schools in order to increase the quality of educational services (Chapter Seven).
- A 1996 meta-analysis of the effects of behavioural parent training on anti-social behaviours of children yielded a significant effect size of 0.86 for behaviours in the home. There was also evidence that the effects generalised to classroom behaviour and to parents’ personal adjustment (Chapter Ten).
- In the UK, the SEN and Disability Act 2001 made it clear that where parents want a mainstream place for their child, everything possible should be done to provide it (Chapter Eleven).
- Countries with more segregated provision report parental pressure for inclusion and there is positive parental support in countries with inclusive education policies. However, parents whose children have more severe special needs are said to prefer segregated settings for their children (Chapter Twelve).
- Developing school support networks has been identified as an important facilitator of inclusive education, as has encouraging a strong sense of community with professionals and paraprofessionals working collaboratively with parents (Chapter Fourteen).
- Parents play a critical role in bestowing social validity on inclusion and in facilitating its implementation (Chapter Eleven).
- Research indicates that parents of children with disabilities believe that inclusion promoted acceptance by non-disabled peers and helped their children’s social, emotional and academic development. Concerns include a loss of access to specialised personnel (Chapter Eleven).
• Parents of children without disabilities value their children’s greater awareness of others’ needs and their enhanced acceptance of human diversity through inclusion. Some, however, were concerned that their children would not receive sufficient assistance from their teachers and they might emulate inappropriate behaviours of children with disabilities (Chapter Eleven).

• Australian parents continue to want more special units in primary and secondary schools, not fewer and strongly support a continuum of services (Chapter Twelve).

• One of the roles of SENCOs in the UK is ‘Consulting, engaging and communicating with colleagues, parents and carers and pupils to enhance pupils’ learning and achievement’ (Chapter Fourteen).

15.2 Levels of Parental Involvement

Five different levels of parent involvement have been identified (Department of Education 1988):

Level 1: Being informed. At this most basic level, the school informs parents about its programmes and, in turn, is asked for information.

Level 2: Taking part in activities. At this level, parents are involved in activities, but to a limited extent. For example, they may be invited to attend various functions.

Level 3: Participating in dialogue and exchange of views. Here, parents are invited to examine school or classroom goals and needs.

Level 4: Taking part in decision-making. At this level, parents are asked about their views when decisions affecting their child are being made. A clear case of this level of involvement is the IEP conference and when parents exercise choice as to their child’s placement.

Level 5: Having responsibility to act. This is the highest level, with parents making decisions in partnership with the school and being involved in both planning and evaluating parts of the school programme. A good example of this would be involving the parents of children with special educational needs in formulating and evaluating school policies. Another example of involvement at this level is the role that parents may play as tutors for their own children.

As well, as we shall see in a later section of this chapter, many parents of SWSEN benefit from behavioural parent training, parent-child interaction therapy and the Triple P Positive Parenting programme.
191

15.3 Policies on Parent Involvement
Many countries have legislation and/or policies on parent involvement in the education of SWSEN, at a minimum their participation in decisions regarding their children’s placements and their IEPs. In this section, consideration will be given to just one country: the UK.

In the UK, there are quite explicit prescribed statutory duties and guidance about various roles and responsibilities concerning parents’ involvement in the education of their children with special educational needs. The former are expressed in the Special Educational Needs and Disability Act 2001 and the Education Act 1996, and the latter in the Special Educational Needs Code of Practice of 2001 (hereafter referred to as the Code).

One of the fundamental principles underpinning the Code is stated as ‘parents have a vital role to play in supporting their child’s education’ (p.8). Similarly, critical success factors include ‘special education professionals and parents work in partnership’ and ‘special education professionals take into account the views of individual parents in respect of their child’s particular needs’ (ibid., emphasis in original).

Key principles in communicating and working in partnership with parents included the following guidance for professionals:
• acknowledge and draw on parental knowledge and expertise in relation to their child
• focus on the children’s strengths as well as areas of additional need
• recognise the personal and emotional investment of parents and be aware of their feelings
• ensure that parents understand procedures, are aware of how to access support in preparing their contributions, and are given documents to be discussed well before meetings
• respect the validity of differing perspectives and seek constructive ways of reconciling different viewpoints
• respect the differing needs parents themselves may have, such as a disability, or communication and linguistic barriers
• recognise the need for flexibility in the timing and structure of meetings.

The different roles and responsibilities of local education authorities (LEAs) and schools include the following, as outlined in Chapter 2 of the Code:
**LEAs**

- have a statutory duty to provide parent partnership services;
- should ensure that parents and schools receive clear information about services and providers (including where relevant the involvement of voluntary groups);
- have responsibility for the provision of a wide range of information material for parents;
- should inform all parents that all maintained schools are required to publish their SEN policy; and
- have a statutory duty to provide disagreement resolution arrangements that can demonstrate independence and credibility in working towards early and informal dispute resolution.

**Schools**

- should recognise that teachers, SENCOs, pastoral and other staff all have an important role in developing positive and constructive relationships with parents;
- should accept and value the contribution of parents and encourage their participation;
- make every effort to identify how parents prefer to work with schools, with the recognition that some families will require both practical help and emotional support if they are to play a key role in the education of their children;
- should seek to develop partnerships with local parent support groups or voluntary organizations;
- have a statutory duty to publish their SEN policy;
- should have a clear and flexible strategy for working with and encouraging parents to play an active role in the education of their children; and
- in publishing their SEN policy, should seek to ensure it is presented in parent friendly formats.

**The Parent Partnership Service**\(^{35}\) should

- provide flexible services for parents, including access to other agencies and organisations, and, for all parents who want one, access to an Independent Parental Supporter;
- provide accurate, neutral information on parents’ rights, roles and responsibilities within the SEN process, and on the wide range of options available, to enable them to make informed decisions;
- provide training for parents, Independent Parental Supporters and school staff;
- work with schools, LEA officers and other agencies to help them develop positive relationships with parents;
- establish and maintain links with voluntary organisations; and
- ensure that parents’ views inform and influence the development of local SEN policy and practice.

Despite these policies, a recent UK survey found that 72% of parents wanted more involvement in their children’s schooling (Department for Education & Skills, 2007).

\(^{35}\) As of 2009, over 2000 Parent Support Advisors had been employed to work across over 8000 schools (Training and Development Agency for Schools, 2009).
15.4 Parents’ Participation on the IEP Process

The writer and his colleagues at the University of Canterbury (Mitchell et al., 2010) recently completed a review of the literature on IEPs, which contained a section on parental involvement. In summary, the following points were made from the international literature:

- Professionals need to build a partnership with family members based on mutual respect, open communication, shared responsibility, and collaboration (Zhang & Bennett, 2003).
- Effect sizes for the impact of parent involvement on children’s academic achievement have been calculated from meta-analyses to be 0.51 (Hattie, 2009).
- There is an extensive research literature on parental participation in the IEP process, which indicates that the reality of parental participation is problematic (e.g., Garriott et al., 2000; Harry et al., 1995).
- The gap between the rhetoric and the reality of parent involvement is considered to be because there are various barriers to the meaningful participation of parents, both generically and those specifically related to IEPs (Hornby & Lafaele, in press).
- Strategies for overcoming barriers and facilitating the participation of parents in the IEP process are summarised, but no studies could be located which evaluated whether implementing such strategies has led to increased participation of parents in the IEP process.

15.5 Parent Training Programmes

As well as participating in decisions regarding their child’s placement and in the design of IEPs, parents of SWSEN may be offered various types of programmes aimed at increasing their skills in working with their children. Three stand out:

*Behavioural parent training.* In this programme (sometimes referred to as *parent management training*), parents are typically helped to use effective behavioural management strategies in their homes. This strategy is often based on the assumption that children’s conduct problems result from maladaptive parent-child interactions, such as paying attention to deviant behaviour, ineffective use of commands, and harsh punishments. Thus, parents are trained to define and monitor their child's behaviour, avoid coercive interchanges and positively reinforce acceptable behaviour by implementing developmentally appropriate consequences for their child’s defiance. Such
parent training is typically conducted in the context of group or individual therapy. It includes a mixture of didactic instruction, live or videotaped modeling, and role-plays. As its name implies, an important element of behavioural parent training is the effective administration of reinforcement. This involves reinforcement being administered contingently (i.e., after the target behaviour), immediately, frequently and with a variety of high quality reinforcers that are meaningful to the child. As well, such techniques as shaping and prompting are used. For reviews of some of the vast literature on parent management training, see, for example, Kazdin & Weisz (1998) and McCart et al. (2006).

Parent-child interaction therapy. This strategy is closely related to behavioural parent training, but without the close adherence to behavioural principles. It is usually a short-term intervention programme aimed at parents of children with a broad range of behavioural, emotional or developmental problems. Its main aim is to help parents develop warm and responsive relationships with their children and develop acceptable behaviours. It includes non directive play, along with more directive guidance on interactions, sometimes using an ear microphone.

Triple P-Positive Parenting Programme. This is a multi-level parenting and family support strategy aimed at reducing children’s behavioural and emotional problems. It includes five levels of intervention of increasing strength:

(a) a universal media information campaign targeting all parents: e.g., promoting the use of positive parenting practices in the community, destigmatising the process of seeking help for children with behaviour problems, and countering parent-blaming messages in the media;

(b) two levels of brief primary care consultations targeting mild behaviour problems: (i) delivering selective intervention through primary care services such as maternal and child health agencies and schools, using videotaped training programmes to train staff; and (ii) targeting parents who have mild, specific concerns about their child’s behaviour or development and providing four 20-minute information-based sessions with active skills training;

(c) two more intensive parent training programmes for children at risk for more severe behaviour problems: (i) running a 10-session programme which includes sessions on children’s behaviour problems, strategies for encouraging children’s development
and managing misbehaviour; and (ii) carrying out intervention with families with additional risk factors that have not changed after lower levels of intervention (Sanders, 1999).

15.6 The Evidence on Parental Involvement
As outlined in Mitchell (2008), there is quite an extensive international literature on the efficacy of parental involvement in their children’s education:

A 1998 review of treatments of children and adolescents with conduct disorders, covering the period from 1966 to 1995, found 29 well-designed studies. Parent training was one of two treatments that were identified as being ‘well-established’ (Brestan & Eyberg, 1998).

A 1996 meta-analysis of the effects of behavioural parent training on anti-social behaviours of children yielded a significant effect size of 0.86 for behaviours in the home. There was also evidence that the effects generalised to classroom behaviour and to parents’ personal adjustment. It was noted, however, that these studies compared parent management training with no training, and not with other strategies (Serketich & Dumas, 1996).

However, a recent meta-analysis did compare the effectiveness of two different strategies: behavioural parent-training (30 studies) and cognitive-behavioural therapy (41 studies) for children and adolescents with antisocial behaviour problems. The effect size for behavioural parent training was 0.46 for child outcomes (and 0.33 for parent adjustment) compared with 0.35 for child outcomes with cognitive-behavioural therapy. Age was found to influence the outcomes of the two interventions, with behavioural parent training having a stronger effect for preschool and elementary school-aged children, while cognitive behavioural training had a stronger effect for adolescents (McCrt et al., 2006).

Another study combined parent involvement and cognitive behavioural therapy. Three groups were compared: (a) those receiving cognitive behavioural therapy with parent involvement (N=17), (b) those receiving cognitive behavioural therapy without parent involvement (N=19), and (c) a waiting list control group (N=14). The children involved in the study were aged from seven to 14 years and all were diagnosed with school phobia. Both treatment conditions resulted in reductions in the children’s social and general anxiety at the end of the treatment and on follow-up after six and 12
months, with no corresponding improvements for the waiting list group. These results do appear, however, to favour cognitive behavioural therapy, as the parental involvement had no additional positive effect (Spence et al., 2000).

A US study examined changes in parent functioning as a result of participating in a behavioural parent training programme designed for children aged 6 to 11 with attention-deficit hyperactivity disorder (ADHD). The programme comprised nine sessions conducted over a two-month period, The content included (a) an overview of ADHD, (b) a review of a model for understanding child behaviour problems, (c) positive reinforcement skills (e.g., positive attending, ignoring, compliance with requests, and a home token/point system), (d) the use of punishment strategies (e.g., response cost, and time out), (e) modifying strategies for use in public places, and (f) working cooperatively with school personnel, including setting up daily report card systems. Compared with equivalent families on the waiting list for the treatment, those receiving the behavioural parent training showed significant changes in their children’s psychosocial functioning, including improvements in their ADHD symptoms. As well, the parents showed less stress and enhanced self-esteem (Anastopolous et al., 1993).

A review of outcomes of parent-child interaction therapy (see above) concluded that it was generally effective in decreasing a range of children’s disruptive and oppositional behaviours, increasing child compliance with parental requests, improving parenting skills, reducing parents’ stress levels and improving parent-child relationships (McIntosh et al., 2000).

A US study investigated the long-term maintenance of changes following parent-child interaction therapy for young children with oppositional defiant behaviour. This study involved interviewing 23 mothers of children aged from six to 12 years. Changes that had occurred at the end of the intervention were maintained three to six years later (Hood & Eyberg, 2003).

An Australian paper reports on studies of the Triple P-Positive Parenting Program (outlined above), administered to parents in groups. One of these involved 1,673 families in Perth, Western Australia. Parents who received the intervention reported significantly greater reductions on measures of child disruptive behaviours than parents in the non-intervention comparison group. Prior to the intervention, 42% of the children had disruptive behaviour, this figure reducing to 20% after intervention (Sanders, 1999).
In a summary of parent-mediated interventions involving children with autism, an overview paper concluded that parents learnt behavioural techniques to increase and decrease selected target behaviours in their children (Matson et al., 1996). Among the studies cited was one in which parents were taught to help their children follow photographic schedules depicting activities such as leisure, self-care and housekeeping tasks. The results showed increases in social engagement and decreases in disruptive behaviour among the children with autism (Kranz et al., 1993).

As well as the foregoing, which appeared in Mitchell (2008), Shaddock et al. (2009) drew attention to Risko and Walker-Dalhouse’s (2009) summary of research on methods for addressing the power imbalance that sometimes exists between parents and teachers. They found that teachers strengthened partnerships by communicating with families frequently; focusing on student success; linking health and social services to families; establishing parent networks; providing a parent meeting room; developing parent programmes in leadership, language and literacy with the parents; and involving parents in the creation and evaluation of school programs. These teachers also visited families and attended community events to learn about their students, families and community, then worked on joint literacy projects with parents, such as dialogue journaling, newsletters, anthologies of poetry, stories and plays.

Also, as summarised in Mitchell et al. (2010), there is extensive evidence for the effectiveness of parent involvement in facilitating children’s achievements as has been reported in several reviews and meta-analyses of the international literature (Cox, 2005; Desforges & Abouchaar, 2003; Fan & Chen, 2001; Henderson & Mapp, 2002; Jeynes, 2003, 2005).

**15.7 Summary**

1. Parents play important, if not critical, roles in educating and supporting their children’s education.
2. Parents have been considered in almost every chapter of the current review.
3. Many countries have legislation and/or policies on parent involvement in the education of SWSEN, at a minimum their participation in major decisions affecting their children, such as their IEPs and decisions regarding placements.
4. Five different levels of parent involvement have been identified: (a) being informed, (b) taking part in activities, (c) participating in dialogue and exchange of views, (d) taking part in decision-making, and (e) having responsibility to act.

5. Parents of SWSEN often require support and guidance in managing their children’s challenging behaviour. There is clear evidence that when this is provided both children and parents can benefit.

6. Three parent training programmes stand out as having good outcomes: (a) behavioural parent training, (b) parent-child interaction therapy, and (c) Triple P-Positive Parenting Programme.
CHAPTER SIXTEEN

UNIVERSAL DESIGN FOR LEARNING

It is fitting that the final chapter be devoted to the concept of universal design for learning since it encapsulates many of the principles traversed in the earlier chapters of this review.

In recent years, the importance of universal design (UD), which had its origins in architecture and engineering, has been increasingly emphasised in education, where it is referred to as universal design for learning (UDL). In a nutshell, UDL involves planning and delivering programmes with the needs of all students in mind. It applies to all facets of education: from curriculum, assessment and pedagogy to classroom and school design. Hence, in their recent review, Shaddock et al. (2009) gave considerable prominence to it, describing it as a ‘leading practice [that] should pervade policy, planning and delivery’ (p.15).

The theme of this chapter is that educational services and policies should be universally designed and inclusive of the needs of SWSEN, along with those of all other students. In other words, regular education should be accessible to all students in terms of pedagogy, curriculum and resourcing, through the design of differentiated learning experiences that minimise the need for subsequent modifications for particular circumstances or individuals.

In this chapter, two topics will be discussed: (a) universal design, and (b) universal design for learning.

16.1 Universal Design

The American architect and designer Ronald L. Mace and his co-workers, at what became the Center for Universal Design at North Carolina State University, first used the term ‘universal design’ in the 1980s. Their original aim was to create built environments and tools that are accessible to as many people as possible. As defined by the Center, ‘universal design is the design of products and environments to be usable by all people, to the greatest extent possible, without the need for [subsequent] adaptation or specialized design’. Seven principles for UD have been developed:
1. **Equitable use**: The design is useful and marketable to any group of users. For example, a website that is designed so that it is accessible to everyone, including students who are blind and using text-to-speech software, employs this principle.

2. **Flexibility in use**: The design accommodates a wide range of individual preferences and abilities. An example is a museum that allows a visitor to choose to read or listen to the description of the contents of a display case.

3. **Simple and intuitive use**: Use of the design is easy to understand regardless of the user’s experience, knowledge, or language skills. Science laboratory equipment with control buttons that are clear and intuitive is a good example of an application of this principle.

4. **Perceptible information**: The design communicates necessary information effectively to the user, regardless of ambient conditions or the user’s sensory abilities. An example of this principle being employed is when multimedia projected in a noisy academic conference exhibit includes captioning.

5. **Tolerance for error**: The design minimises hazards and the adverse consequences of accidental or unintentional actions. An example of a product applying this principle is educational software that provides guidance when the student makes an inappropriate selection.

6. **Low physical effort**: The design can be used efficiently and comfortably with a minimum of fatigue. Doors that are easy to open by people with a wide variety of physical characteristics demonstrate the application of this principle.

7. **Size and space for approach and use**: Appropriate size and space is provided for approach and use, regardless of the user’s body size, posture or mobility. A science laboratory work area designed for use by students with a wide variety of physical characteristics and abilities is an example of employing this principle.

(Centre for Universal Design, 2010; Ginnerup, 2009)

Although UD standards address the needs of people with disabilities, its originators emphasised that it is a comprehensive concept designed to benefit all users. Thus, it involves developing products (appliances, settings, systems, and processes), which can be used by a wide variety of persons with different levels of abilities in a wide variety of settings, conditions, and circumstances. It goes beyond the issue of mere accessibility of buildings for people with disabilities and should become an integral part of policies and planning in all aspects of society (Ginnerup, 2009).

### 16.2 Universal Design for Learning

In the US, one of the key recommendations of the *President’s Commission* (2002) was to incorporate universal design in accountability tools: ‘all measures used to assess accountability and educational progress [should] be developed according to principles of universal design so that modifications and accommodations are built into the test that will not invalidate the results’ (p.27).
But, as we shall see, UDL goes well beyond assessment. It recommends ways to provide cognitive, as well as physical, access to the curriculum, assessment and pedagogy. In education, it is usually referred to as ‘Universal Design for Learning’ (UDL), which ‘refers to the creation of differentiated learning experiences that minimise the need for modifications for particular circumstances or individuals’ (Villa et al., 2005, p.35). Thus, rather than adapting things for individuals at a later time, UDL environments are created from the outset to be accessible to everyone. In other words, ‘pre-fitting’ not ‘retro-fitting’ is the aim.

The Center for Applied Special Technology (2010) provides a useful definition of UDL as being:

the design of instructional materials and activities that allows the learning goals to be achievable by individuals with wide differences in their abilities to see, hear, speak, move, read, write, understand English, attend, organize, engage, and remember. It is achieved by means of flexible curricular materials and activities that provide alternatives for students with disparities in abilities and background as well as those with no visible disabilities. [It] applies not only to the content, but also to goals, methods, and manner of assessment.

The Center goes on to point out that in UDL, (a) alternatives should be built into instruction and should not have to be added on later; (b) it is intended to be inclusive, not solely for those who have disabilities; and (c) it should comprise more than accommodations for physical, sensory, or cognitive disabilities, but should include students with differing abilities, cultural and linguistic backgrounds, and approaches to learning.

According to the Center on Universal Design for Learning, three overarching primary principles guide UDL:

- **Principle I: Provide Multiple Means of Representation** (the ‘what’ of learning). Students differ in the ways that they perceive and comprehend information that is presented to them. For example, those with sensory disabilities (e.g., blindness or deafness); learning disabilities (e.g., dyslexia); language or cultural differences, and so forth may all require different ways of approaching content. Others may simply grasp information better through visual or auditory means rather than printed text. In reality, there is no one means of representation that will be optimal for all students; providing options in representation is essential.

- **Principle II: Provide Multiple Means of Action and Expression** (the ‘how’ of learning). Students differ in the ways that they can navigate a learning environment and express what they know. For example, individuals with significant motor disabilities (e.g. cerebral palsy), those who struggle with strategic and organizational abilities (executive function disorders, ADHD), those who have language barriers, and so forth approach learning tasks very differently and will demonstrate their
mastery very differently. Some may be able to express themselves well in writing text but not oral speech, and vice versa. In reality, there is no one means of expression that will be optimal for all students; providing options for expression is essential.

- **Principle III: Provide Multiple Means of Engagement** (the ‘why’ of learning). Students differ markedly in the ways in which they can be engaged or motivated to learn. Some students are highly engaged by spontaneity and novelty while other are disengaged, even frightened, by those aspects, preferring strict routine. In reality, there is no one means of engagement that will be optimal for all students; providing multiple options for engagement is essential.

The Universal Design for Learning Guidelines on the next page further expands on these principles.

More specifically, citing Lance & Wehmeyer (2001), Wehmeyer et al. (2002) identified six criteria of UDL:

- **Equitable use**: materials can be used by students who speak various languages; they address a variety of levels in cognitive taxonomies and provide alternatives that appear equivalent and, thus, do not stigmatise students.

- **Flexible use**: materials provide multiple means of representation, presentation and student expression.

- **Simple and intuitive use**: materials are easy to use and avoid unnecessary complexity; directions are clear and concise; and examples are provided.

- **Perceptible information**: materials communicate needed information to students independent of ambient conditions or students’ sensory abilities; essential information is highlighted; and redundancy is included.

- **Tolerance for error**: students have ample time to respond, are provided with feedback, can undo previous responses, can monitor progress, and are provided with adequate practice time.

- **Low physical and cognitive effort**: materials present information in chunks that can be completed in a reasonable time frame.

Elsewhere, the present writer pointed out that as rehabilitation services expand, particularly in the area of assistive technology, there will be an increasing need for some degree of international standardisation (Mitchell, 1999).
Universal Design for Learning Guidelines

I. Provide Multiple Means of Representation

1. Provide options for perception
   • Options that customize the display of information
   • Options that provide alternatives for auditory information
   • Options that provide alternatives for visual information

2. Provide options for language and symbols
   • Options that define vocabulary and symbols
   • Options that clarify syntax and structure
   • Options for decoding text or mathematical notation
   • Options that promote cross-linguistic understanding
   • Options that illustrate key concepts non-linguistically

3. Provide options for comprehension
   • Options that provide or activate background knowledge
   • Options that highlight critical features, big ideas, and relationships
   • Options that guide information processing
   • Options that support memory and transfer

II. Provide Multiple Means of Action and Expression

4. Provide options for physical action
   • Options in the mode of physical response
   • Options in the means of navigation
   • Options for accessing tools and assistive technologies

5. Provide options for expressive skills and fluency
   • Options in the media for communication
   • Options in the tools for composition and problem solving
   • Options in the scaffolds for practice and performance

6. Provide options for executive functions
   • Options that guide effective goal-setting
   • Options that support planning and strategy development
   • Options that facilitate managing information and resources
   • Options that enhance capacity for monitoring progress

III. Provide Multiple Means of Engagement

7. Provide options for recruiting interest
   • Options that increase individual choice and autonomy
   • Options that enhance relevance, value, and authenticity
   • Options that reduce threats and distractions

8. Provide options for sustaining effort and persistence
   • Options that heighten salience of goals and objectives
   • Options that vary levels of challenge and support
   • Options that foster collaboration and communication
   • Options that increase mastery-oriented feedback

9. Provide options for self-regulation
   • Options that guide personal goal-setting and expectations
   • Options that scaffold coping skills and strategies
   • Options that develop self-assessment and reflection
16.3 Summary

1. *Universal Design (UD)* had its origins in architecture and engineering, and has been increasingly emphasised in education, where it is usually referred to as *Universal Design for Learning (UDL).*

2. UD may be defined as ‘the design of products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialised design’.

3. UDL involves planning and delivering programmes with the needs of all students in mind from the outset. It applies to all facets of education: from curriculum, assessment and pedagogy to classroom and school design.

4. Three overarching principles guide UDL: (a) provide multiple means of representation, (b) provide multiple means of action and expression, (c) provide multiple means of engagement.

5. More specifically, UDL requires that the following criteria be met (a) equitable use, (b) flexible use, (c) simple and intuitive use, (d) perceptible information, (e) tolerance for error, and (f) low physical and cognitive effort.