

Box 10.3 Skill areas included in functional, activity-based curricula for students with severe and multiple disabilities

Sensori-motor skills

- Stimulation of senses and reflexes—includes visual fixation, tracking and search, sound localisation
- Eye-hand coordination—includes reach, grasp and use of objects
- Spatial relationships and operational causality
- Identification of objects and sensory characteristics—includes colours, shapes and textures.

Physical development

- Balance, posture, walking and running
- Manual dexterity and fine motor coordination
- Ball skills—includes catching, throwing, hitting.

Self-care and self-help

- Feeding—includes using table utensils, cups, glasses and plates
- Toileting—includes toilet-training, washing, showering, shaving
- Money skills—includes recognising and using coins and notes, purchasing goods and receiving change, banking
- Transportation—includes use of buses, taxis, trains
- Shopping and meal preparation—includes planning, purchasing and preparing meals.

Language and academics

- Looking and imitating behaviour
- Nonverbal and augmentative language systems—includes learning and using signs, use of symbol systems (such as Bliss symbols) if appropriate
- Receptive language—includes word recognition, listening, following directions
- Expressive language—includes initiating speech, asking and conversations
- Functional academics—includes recognition of important signs (e.g. male and female toilet signs, no entry signs), functional reading and mathematics.

Social and interpersonal skills

- Recognition of familiar people
- Play—includes isolated and cooperative play, sharing and self-protection, temperament
- Use of recreation and leisure time—includes TV, radio, records, sport, use of community facilities, eating out
- Sexual development—includes intimacy, privacy, sexual behaviour, menstruation, marriage, child-rearing.

Vocational skills

- Prerequisite skills—includes coordination, tying and threading, repetitive activities
- Prerequisite social skills—includes following instruction, social language and interactions
- Employment skills—includes telling time, attendance and specific task skills.

Graphic communication systems such as line drawings, photographs or abstract symbols that represent words, concepts or messages are often taught to students who have physical or motor problems that make speech difficult. Oral and sign languages—such as the Makaton sign language which is used widely in Australia and New Zealand (see Cooney, 1985)—are more appropriate for youngsters who are able to make understandable sounds and gestures. Deciding which augmentative communication system to employ involves careful evaluation of the physical and cognitive characteristics of the student. One of the early objectives of teaching graphic or gestural communication skills is to establish requesting and rejecting behaviour, in other words, to provide the individual with the opportunity to make choices and express their wishes (see e.g. Reichle, York & Sigafos, 1991; Sigafos & Dempsey, 1992).

As with language, the development of simple concepts and self-help skills (such as feeding, toileting and dressing) requires major adaptations in education and in training programs. Medical problems associated with neurological, glandular or metabolic disorders may require monitoring and medication (e.g. for the control of seizures), and orthopaedic and sensory impairments call for special aids and facilities within the school or classroom. These medical and physical complications, added to a range of emotional disturbances, place extreme demands on the physical, emotional and intellectual resources of teaching staff and aides.

Box 10.3 summarises the more important skills addressed in education and training programs for students with a severe intellectual disability, although the achievement of many may be beyond the capability of some people. It is also important to emphasise that the skill areas listed in the Box are infrequently, if ever, addressed in isolation. They are tackled within the framework of a functional, activity-based curriculum which is designed to meet the needs of the individual student.

There are many references in Australian and New Zealand literature to the training of children and adults with a moderate to profound intellectual disability. Perusal of material listed at the end of this chapter will provide many examples.

Instructional strategies for students with an intellectual disability

There are numerous strategies that teachers may use at the primary and secondary levels to enhance the learning of students with a mild or severe intellectual disability. They can be divided into two groups: those that emphasise behavioural methods and those that emphasise cognitive concepts.

Behavioural principles in education

The basic behavioural concepts—such as reinforcement of desired behaviour, extinction of undesirable behaviour and shaping of responses toward a behavioural goal—are important in all learning situations as they sustain social interaction and provide feedback about success and failure. In addition, there are several systematic teaching and learning strategies that incorporate behavioural principles

Table 10.6 Six behavioural approaches to teaching students with a mild to severe intellectual disability

Procedure	Outline of procedure	Most appropriate target group(s)
Task analysis	Task analysis involves analysing the essential component skills or activities, and their prerequisites, that make up a complex task or set of behaviours. Task analysis involves isolating, sequencing and describing the subcomponents so that they can be taught to the learner as a sequence of discrete tasks, each of which has a behavioural objective. Mastery of all subtasks ensures mastery of the whole.	Students of all abilities (see Evans, Brown, Weed, Spry & Owens, 1987). Most curricula are the product of task analyses as they identify the various subskills that lead to mastery of a large body of knowledge.
Precision teaching	Precision teaching involves monitoring a student's performance during a task-analysed learning activity. Rather than following a predetermined course, precision teaching involves changing content, activities and materials to sustain the student's progress. Judgments about progress are based on graphs representing the student's performance at each stage in the learning process.	Students of all abilities (see Lindsay, 1992).
Data-based instruction	This has become almost the generic term for behavioural approaches although it was originally conceived as a highly-structured procedure for students of low ability. Activities to be taught are developed in teach-test packages that provide the objectives, materials to be used, data to be collected and a recording sheet on which the data is to be recorded.	Students of all abilities although programs are often used with students of low ability (see Browder, 1987).
Contingency-shaped learning	The basic idea of contingency-shaped learning is of the systematic application of reinforcers or punishers based upon the achievement or non-achievement	Students of all abilities although programs employing token economies are more

Procedure	Outline of procedure	Most appropriate target group(s)
	of goals. Contingency management and token economies prescribe the form and amount of reinforcement available chosen by the student(s).	appropriate for students of low ability (see Kazdin, 1992).
Mastery learning	Mastery learning involves progress through a series of learning steps that permit correction of errors, consolidation of learning through practice and mastery of skills or content at a predetermined level before moving to the next level in the hierarchy of skills to be learned. Mastery learning may take place in an individual or group setting.	Predominantly students of average and near-average ability (see Chan & Cole, 1987, for an example).
Direct instruction	This is another approach that has assumed the status of a generic model. Direct instruction typically involves face-to-face instruction in which the teacher tells, shows and models the skills to be learned in a highly structured step-by-step fashion.	Predominantly students of average and near-average ability. The DISTAR approach to reading instruction is possibly one of the best known direct instruction models (see also Engelmann, Becker, Carnine & Gersten, 1988, for an example).

which are useful for individualising instruction for students, including those who have intellectual disabilities. Some of these strategies are more appropriate for students who have a mild, rather than a severe disability as they require functional speech or an understanding of complex concepts. Table 10.6 lists six strategies that teachers might employ in individual or whole-class settings.

Cognitive-behaviour modification

Some behaviourists were unable to accept the lack of thought and human involvement that is implied in the strict behavioural approach. This led to the development of teaching strategies that included cognitive and behavioural aspects of the learning process and to the formation of attempts to modify

Table 10.7 Five cognitive education approaches to teaching students with mild intellectual disabilities

Procedure	Outline of procedure	Most appropriate learning context(s)
Self-regulated learning	Self-regulation refers to flexible problem solving which includes the development, selection, connection and monitoring of effective strategies to maximise learning. Students make their own learning decisions, set and accomplish goals, learn independently and accept responsibility for errors. Students with a mild intellectual disability are quite capable of controlling their own learning independently of others.	Integration settings at the primary and secondary levels. Self-regulatory activities can be achieved through one-to-one or small-group learning situations.
Cooperative teaching and learning	Cooperative teaching refers to the development of classroom practices and attitudes which enhance students' social and group participation skills. Brainstorming, feedback and sharing sessions in large or small groups are among the activities used. There are also formal procedures such as peer tutoring and reciprocal teaching. One of the most important aspects is the development of inter-dependency—students must realise that the success of the group depends on cooperation of all participants.	Cooperative learning is a whole-of-class strategy. Students with an intellectual disability can be included easily provided that there is peer support (see Smith, 1987, for an example).
Peer tutoring	Peer tutoring involves one student acting as a teacher or tutor to a peer. Reading has been the primary focus of many peer tutoring programs. Children in dyads read information to each other while one listens and attempts to recall and summarise the information. One at a time, the children then correct errors	Several studies have involved children with and without disabilities to teach peers with learning problems. In one study, two adolescents (one with a moderate and one with

Procedure	Outline of procedure	Most appropriate learning context(s)
	and facilitate the organisation and learning of the material.	a severe intellectual disability) each taught three peers with severe disabilities to perform a complex packaging and assembly task (see Ashman & Elkins, 1990; Wacker & Berg, 1985).
Reciprocal teaching	Reciprocal teaching is a successful method of reading instruction. In pairs or trios, students learn to ask questions about their reading activity and the content of the passage being studied. At the beginning of instruction, the teacher provides a model for students but gradually passes over responsibility for the teaching process as students become competent 'instructors' in a peer tutoring environment.	Students attending regular classes or special groups for students with mild disabilities—although these students tend to gain less than their non-disabled peers (see Palincsar & Klenk, 1992, for a description of reciprocal teaching methods).
Strategies program for effective learning/thinking	This is a classroom-based program that involves the direct teaching of information-processing strategies for specific activities and skill areas. The program alerts students to the existence of cognitive strategies, demonstrates their use, promotes transfer of strategy use to other skill areas and encourages independent use. The program focuses on general strategies as well as social skills, mathematics, reading and knowledge acquisition, memory, study skills and time management, mood setting and metacognitive strategies.	This program may be more appropriate for students who are not experiencing learning problems but it may also be useful in some learning situations for students with a mild intellectual disability. (see Peat, Mulcahy & Darko-Yeboah, 1989, for more information).

students' behaviour by changing the way they think about it. In other words, the focus of cognitive training was on how learners acquire knowledge and how they deal with (or process) it (Shuell, 1986).

Verbal self-instruction is one form of cognitive-behaviour modification which involves the students in working through a series of self-instruction steps. For example, a student may learn to verbalise the process involved in spelling a new word as: 'First, I will look at the word. Then I will try to break it into smaller parts . . .' and so on. Through systematic training, the student learns the self-instruction steps and the teacher takes a less active role in directing and modelling the desired behaviour (Meichenbaum & Asarnow, 1978).

The verbal self-instruction model has been used widely to meet the needs of special groups, such as students experiencing difficulties in mathematics and reading. The effectiveness of verbal self-instruction approaches has not been overwhelming despite the enthusiastic claims of those who promote it. Perhaps the major criticism is its reliance on teacher-designed instructional sequences which pay little attention to how students describe learning in their own words or how they prefer to tackle the problem. The success of this approach depends on the student being able to interpret teacher-imposed self-instructions so that the meaning becomes personal.

Cognitive strategies

Cognitive approaches to instruction have also developed outside the behaviourist tradition. Many of the educational applications of cognitive research were developed in laboratory settings in which students were withdrawn from their classrooms for individual or small-group training. In the past, one focus was on teaching memory strategies (e.g. rehearsal, categorisation) divorced from curriculum content. In light of the present emphasis on teaching students within mixed-ability classrooms, some research projects have attempted to apply these small-group and laboratory methods to whole-class settings with varying degrees of success. Most cognitive methods have processing or language demands that make them unsuitable for students who have a severe learning problem, but they are appropriate for most, if not all, integration settings. Table 10.7 summarises several approaches.

In addition to the five cognitive education approaches mentioned above, two others are worthy of attention: Instrumental Enrichment and Process-Based Instruction.

Instrumental Enrichment

Instrumental Enrichment has generated a following in the United States, Canada and, to a lesser extent, Australia and New Zealand. It was designed to improve the reasoning skills of culturally-deprived and educationally-disadvantaged adolescents, although, in practice, it has been used most frequently with adolescents with a mild intellectual disability (Feuerstein, Rand, Hoffman & Miller, 1980). The training program is based on paper-and-pencil exercises that provide structured practice in specific cognitive skills. These materials initially

are not related to academic tasks because Feuerstein claimed that to make them so would distract the student from the cognitive focus of the task. Each lesson follows a set procedure in which the teacher guides the student's performance and relates the exercises to current learning problems (see the study reported by Howie, Thickpenny, Leaf and Absolum (1985), which was undertaken in New Zealand, for a typical application of Instrumental Enrichment).

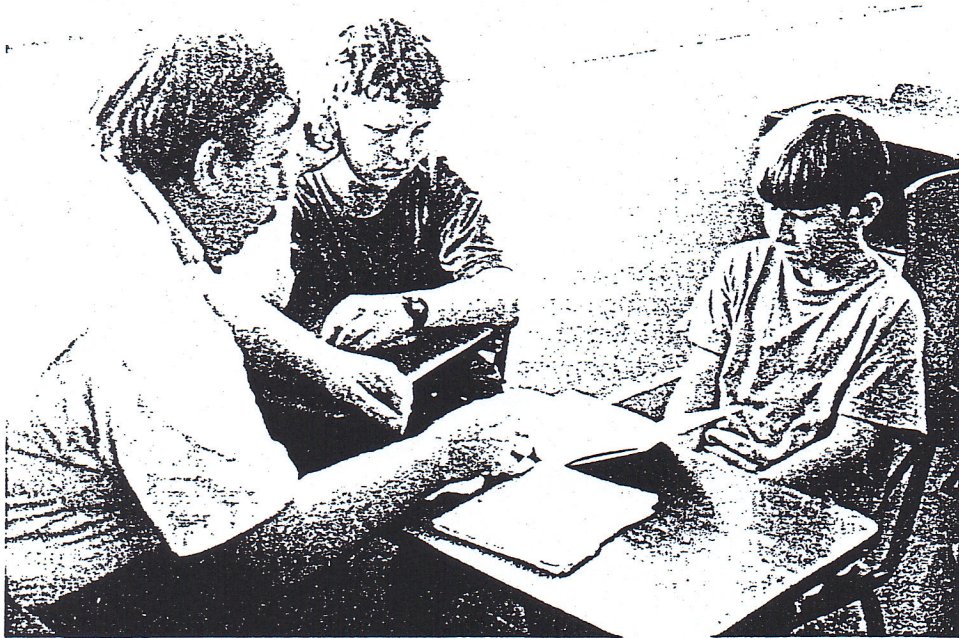
While Instrumental Enrichment has been marketed enthusiastically by Feuerstein in Canada, the United States and now in Britain, it has a major credibility problem. This has developed because of the lack of research support for claims made concerning improvement in the achievement of students involved in Instrumental Enrichment programs (see Bradley, 1983; Savell, Twohig & Rachford, 1986). However, it is an important landmark in the field of educational innovation and is among the few cognitive education approaches that have been devised for use within intact classrooms.

Process-Based Instruction

A cognitive training approach developed in Australia is currently being used in primary and secondary schools in several states and also in other countries. Process-Based Instruction (PBI) was conceived in 1981 to help teachers improve the achievement of students with a mild to moderate intellectual disability. PBI is based on problem solving, planning, metacognition and memory research. It synthesises relevant concepts into a model of instruction which now can be used by remedial and resource teachers in small-group instruction or by regular teachers in intact, mixed-ability classrooms (Ashman & Conway, 1989).

Perhaps the most important feature of PBI is its general applicability to mainstream classes which contain students of diverse skills and abilities. PBI has a number of characteristics that make it attractive to experienced and relatively inexperienced teachers:

- PBI *integrates cognitive and academic skills*. There is no requirement to teach PBI as a separate topic. The model does not complement or supplement the regular curriculum. It is part of an integrated teaching-learning method. Cognitive skill development is part of each lesson in which PBI strategies are used and requires no additional teaching materials or teacher preparation time.
- PBI *can be used in all instructional settings*. PBI can be used effectively by teachers in mainstream classes or by support, resource or remedial teachers in one-to-one or small-group settings. There is no requirement for additional teaching support once PBI has become established within the classroom. In effect, PBI is self-generating and maintaining.
- PBI is *student-orientated*. It was designed to ensure that students focus on the task at hand and learn appropriate strategies and plans for successful problem solving. Students learn that success comes from their own efforts and motivation rather than from the energies and input of others, notably their teachers.
- PBI *involves the student*. While the teacher remains responsible for how and when the curriculum is presented, the responsibility for applying and assessing the value of plans and strategic behaviour becomes a shared responsibility between teacher and student.



A skilled PBI trainer helps a student refine a plan.

PBI has been effective in improving not only the students' academic performances on standard achievement tests in mathematics and reading, but also cooperation between students and between the teacher and students in the classroom. While PBI is now used mainly as a mainstream class program, there are many teachers who use the methods with students with a mild or moderate intellectual disability.

In a study in Britain, PBI was used successfully with a group of primary school-aged children who were experiencing reading difficulties (Wright, 1992). In a number of other projects, Ashman and Conway have shown the effectiveness of PBI in whole-classroom settings, leading to improvement in students' academic and organisational skills (Ashman & Conway, 1993b). A complete description of the background and classroom application of PBI is given in Ashman and Conway (1993a).

Distance education

Australia is a vast land only slightly smaller in area than continental United States, though in contrast nearly 95% of Australians live within 80 kilometres of the coast. For families in which there is a child with an intellectual disability, living in a remote area can cause difficulties and stress in addition to those experienced by city or urban dwellers.

A clear picture of the available services and needs of families and children in isolated areas was not available until an extensive study was undertaken by Brentnall and Dunlop (1985), sponsored by the Uniting Church National

Mission Frontier Services. This survey augmented an earlier report prepared by the University of Western Australia National Centre for Research on Rural Education which examined children with disabilities in rural areas of Western Australia (Barrie & Tomlinson, 1985).

The United Church survey drew 1220 completed questionnaires from regions designated as isolated areas by the Commonwealth Taxation Department (with some inclusions and exclusions). Western Australia was not included as it was not necessary to duplicate the Barrie and Tomlinson study. Some 277 children (22.7% of the sample) were identified as intellectually disabled (or as having specific delays in development). Sixty-three per cent were males and approximately 12% were of Aboriginal descent.

There were several results that warrant reporting here. In the total sample, 89% of children were receiving educational services. Most of those in the remaining 11% were below two years of age. Even in the most isolated areas three in four children participated in some form of education (see Table 10.8).

Not surprisingly, parents of young children (up to four years of age) indicated that greater contact with other children was their most critical need, followed by medical consultation and respite care and by the need to communicate with other parents about problems being experienced. For those with children from five to nine years, educational advice was the primary need, followed by communication and therapy. For the oldest children, education, communication and medical advice were the top priorities.

Table 10.8 Percentage of children with an intellectual disability in isolated areas in educational settings, by age

Educational setting	0-4 years n=25	5-9 years n=107	10-14 years n=97	15-18 years n=48	Total N=277
Attending school	8	74	96	83	77
Attending preschool	32	20	1	4	12
Attending a play group	44	3	0	2	5
Not receiving education	16	4	3	10	6

Note: Two columns do not total 100% due to rounding error.

Source: Brentnall and Dunlop (1985), pp. 127-29.

As the data above show, Departments of Education have been active in providing distance education programs to cater for students living in isolated areas. The first distance education initiative was established in 1918 in New South Wales with other state governments responding soon after. A report by Jones (1988) suggested that there were approximately 140 000 school-aged children in New South Wales, many of whom would be unable to attend a local school. Based on prevalence figures, this would mean that approximately 3000 students have an IQ less than 69 points—students who might be considered to have an intellectual disability. In reality, in 1988 there were only 30 isolated children with special needs enrolled in distance education programs.

Queensland's Department of Education was the first to establish an Isolated Children's Special Education Unit, in 1976, as a support service to regular schools or mainstream correspondence classes. In the late 1980s the Unit had a staff of 14 teachers located in Brisbane who provided programs or programming support for approximately 250 students at home or in over 120 small schools, including non-government schools. In 1987 two decentralised Schools of Distance Education opened—in Charters Towers and in Longreach. Staff at these centres maintained regular face-to-face contact with students through visits, camps and school-of-the-air-type broadcasts. Following the recent restructuring of the Queensland Department of Education, there are now seven Schools of Distance Education, each with their own learning support teacher who works with classroom teachers to support home-based learners. These schools are located in the Schools of Distance Education in Brisbane, Charleville, Charters Towers, Longreach, Cairns, Capricornia in Emerald, and Rockhampton and Mt Isa. In 1993 there were approximately 20 students classified as having a mild or moderate intellectual disability.

New Zealand has developed many programs along the lines of those in Queensland. Its Special Needs Section provides a comprehensive support service to small schools, including facilitating integration using special programs. It also has a well-developed visiting program as well as teachers in the field. As in Queensland, the New Zealand program is centrally managed, although teachers are assigned to a district in order to allow for visits and to permit them to develop a knowledge of the services in the local area. One innovative aspect of the program is the provision of early intervention support for children less than one year of age.

Apart from the state-based programs in Australia, there have been a number of local initiatives aimed at providing specialist services for families living in rural communities. One of these, reported by Shaddock and Batchler (1986), operated via teleconferencing and face-to-face activities. Another, the Child and Parent Support project in the Gympie area of Queensland, focused on assessment and educational enrichment for children between birth and 12 years of age and the development of resources for their families (Bramley, Hayes & Elkins, 1985).

Emerging issues

In February 1989 the Australian Bureau of Statistics (ABS) released its latest report on the nation's handicapped. Entitled *Disabled and Aged Persons, Australia, 1988* (1989a), the surveys showed that the number of people with a disability had increased by over 600 000 since the last report was distributed in 1981 (from 13.2% to 15.6% of the population). While this is a surprising result, the change appears to stem from people's willingness to report a disability and an increase in the number of older people with a disability. Regardless, the rise in the incidence rate is disturbing.

The ABS survey highlights changes in the perception of disability within the community. It also implies that there is a growing need to provide functional education and training which addresses the needs of individuals at all age and ability levels. Achieving this goal involves not only targeting specific subgroups, but also changing attitudes within the general community. In this final section some of these issues will be highlighted. They need close scrutiny and, more importantly, resolution.

Integration and teacher preparation

Integration continues to be the most prominent policy that affects the education of students with an intellectual disability. While some state systems moved quickly to introduce changes, there are still many young people who remain outside the educational mainstream—some continue to be isolated even though they attend regular classes.

There are a number of obstacles to successful integration. Insufficient government funds to provide and sustain support teachers and integration aides is perhaps having the most effect in the short term. Teacher training, however, is arguably the most crucial factor that will govern the outcome of integration practices in the long term.

Many regular classroom teachers maintain that they do not have the skills demanded by the extended ability range of students who are not in their classes. At one level, many teachers are not exposed to inservice activities which might provide them with a range of skills specifically directed towards integration and few have special education training that might equip them with suitable skills. At another level, those undertaking teacher training today are still not equipped with educational strategies that are suitable for the diverse needs of students in mainstream classes. Certainly most—although not all—teacher training programs require students to complete one or two special education subjects. However, these subjects tend to preserve the distinction between *special* and *regular* education rather than seeing them as two extremities on a continuum of teaching practice, and they rarely encourage contact with students with special needs.

An argument can be made for a change in the focus of teacher training programs. A growing emphasis could be placed on interdisciplinary teams involving parents, aides, counsellors and therapists in schools. The latter group are playing a small but increasing role in integration programs. Most Departments of Education provide services, but the level of the service is still far below that which is required. One government document stated:

Currently, therapists are centre-based and available for the multiply handicapped at some special schools. There are few available to visit children in regular schools for assessment, program development and treatment. Thus, the supply of therapy services to disabled children would be much more difficult if centre-based program delivery were to change. Therapists would have to become more

mobile with the dispersion of children away from special schools. In response, the staff ceiling would need to be raised. Greater numbers of therapists would be required to cater for the diversity of disability and the variability in students' educational settings. (Advisory Council for Special Education, 1987, p. 31)

Despite this statement, providing specialist services for students in regular schools is not impossible. Regency Park Centre for Young Disabled (a division of the Crippled Children's Association of South Australia) has provided specialist services to integrated students with physical and intellectual disabilities for some years (Ziersch, McGregor & Braybon, 1991). The Regency Park program includes therapist and visiting specialist teacher services and teaching staff inservice, provides equipment and regular monitoring of student progress and emphasises functional output.

Innovative teaching strategies

Over the past ten years there has been an exponential growth in the number of new teaching approaches that are appropriate for mainstream and special classrooms. Behavioural interventions remain highly relevant for students with a moderate to severe disability. For students of higher ability, cognitive education interventions are becoming more popular. There is no single approach that will be successful for every teacher of every student. It remains the teacher's responsibility to learn about new (and old) programs and to judge their effectiveness for the specific context in which the teacher works.

At present, one obvious need is for the widespread application of cognitive approaches, introducing them into curriculum services, support documents and teacher training at the pre-service and inservice levels. Equally important is the need to validate the effectiveness of all new initiatives through empirical studies. The successful establishment of what might be called a *cognitive curriculum* in the classroom, school or system is very much dependent upon these factors (Hudson, Morsink, Branscum & Boone, 1987; National Joint Committee on Learning Disabilities, 1987).

Education for life

Perhaps the most important consideration in the education of students with intellectual disabilities is deciding what they need in preparation for post-school life. Many high schools have undertaken transition programs that provide students with the opportunity to gain experience working in settings similar to those that will be available when they leave school. Both these work experience opportunities *and* pre-vocational training need to be expanded to take into consideration industry requirements and the skills needed for specific occupations (see e.g. Parmenter, 1990).

In some high schools, vocational training programs are not available to students with an intellectual disability because other non-disabled peers are considered to have greater needs. The disadvantage to the students with a

disability means that they rarely have the opportunity to work with power tools, learn about work proficiency, quality, safety and first aid, or to understand the need to communicate with supervisors, comply with directions and avoid disruptive behaviour *on the job*. While post-school supported employment provides some training, there are few school programs that provide it.

In Western Australia, a Post-school Options Program operates for students in their last two years of school. Students with intellectual disabilities may be linked with one of a number of supported employment agencies or, if they have a severe disability, they may be referred to a community access program run by a government department or non-government agency. The Authority for Intellectually Handicapped Persons (called Irrabeena—an Aboriginal word meaning awakening), coordinates the transition program for students who are coming from education support schools. In addition in 1993 the Disability Services Bureau of the Department of Employment, Vocational Education and Training began a course in Perth called 'Preparation for Employment', which specifically targets young adults with an intellectual disability up to age 24 years who have come from educational support centres or units. Developed in consultation with non-government supported employment agencies, this is a vocational training program which not only provides basic work preparation training but also allows the participants to sample a number of work experiences.

Another school-based option may be to introduce a high school program run along the lines of a factory or other industry which would provide training for students with an intellectual disability. The curriculum might include vocational capabilities (work-related skills), independent living skills (transport, communication, self-care, appearance), job requirements (physical and sensory skills, functional academics, interpersonal skills), skill training on industrial machinery and industry liaison (in which tradesmen, managers and Technical and Further Education staff interact with the students). The opportunities generated by such a program for gaining competitive employment for students are potentially huge.

Yet another consideration in the education of students with an intellectual disability is their participation in leisure and recreation activities. Sporting and recreation programs have received minimal attention, especially at the high school level. Many are organised on an *ad hoc* basis, provide few options and involve activities that may be outside the individual student's physical capabilities. As is the case with other curricula, those preparing sport, recreation and leisure programs for students with intellectual disabilities need to consider the abilities and experiences of individual students and direct attention toward the development of physical and social skills (Jobling & Hayes, 1991).

In Australia there are a number of groups that seek to improve the sport and recreation needs of people with an intellectual disability. The most prominent of these, AUSRAPID, was formed in 1986 to enable people with intellectual disabilities to have access to the same sport and recreation organisations and opportunities for coaching and skill development as other members of the community. The organisation is involved in an extensive program of advocacy, consultancy and networking with affiliated organisations in each state and

with national sport and recreation bodies. The Australian Sports Commission has also been involved in extending the sport and recreation activities of people with an intellectual disability through the production of the *Aussie Sports Manual* for children with special needs and the *Aussie Able Program* which assists sporting bodies with coaching programs for athletes with disabilities.

While the various organisations aim to fill an obvious gap in services for people with an intellectual disability, there is much more that can be achieved through carefully designed school programs, beginning in preschool. Programs that work on the systematic development of motor skills and the integration of students with special needs into the range of sporting activities offered to all students are the most appropriate ways of assisting young people to make the transition from school-based to adult recreation and leisure activities.

Rights and advocacy

School programs also have been slow in addressing human rights and legal issues with students with a disability. Typically, social education is one of the curriculum areas of the school program which is intended to reflect the participation of the individual in community life, value and belief systems, and relationships with others. Lacking in most programs for people with disabilities is any orientation or instruction that is designed to enhance their knowledge of rights and self-determination.

Many organisations, such as the United Nations and the American Association on Mental Retardation, have issued statements about the rights of people with intellectual disabilities. In Australia, the Office of Disability (1988) produced a resource kit *Disability, Society, and Change*, which promotes individual and human rights. It states that people with disabilities, regardless of the origin, nature, type and degree of disability, have the same rights as other members of Australian society:

- to respect, based upon their human worth and dignity;
- to realise their individual capacity for physical, social, emotional and intellectual development;
- to services which will support their attaining an acceptable quality of life;
- to participate in the decisions which affect their lives;
- to the least restrictive alternative in the services they receive; and
- to the pursuit of any grievance in relation to the services they receive.

Rarely, if ever, do teachers specifically provide instruction to students with a disability about the rights they possess. Dealing with this matter directly may go a long way in changing their power base within the community.

Changes in the community

There has been much discussion of changes in attitude toward people with an intellectual disability. The International Year of Disabled People (IYDP) in

1981 drew attention to the need for a re-evaluation of the way in which disability had been viewed. While there were tangible outcomes of IYDP for people with physical disabilities, notably in terms of access to community facilities, few obvious changes resulted for people with an intellectual disability.

Government services that have attempted to establish group homes for people with an intellectual disability regularly face the wrath of local residents. Neighbourhood action groups often argue that the establishment of a group home will lead to a decline in values in the neighbourhood and an increase in sexual attacks, theft and noise disturbance. None of these outcomes are typical of neighbourhood changes following the introduction of group homes.

The ability of society to accommodate diversity can be seen as an indicator of cultural sophistication. For the person with a disability this provides a foundation for the process of *normalisation*—the provision of a lifestyle similar in nature to that of other members of society, including similar opportunities for variation and choice. It means acceptance of the individual within the society with the same rights, responsibilities and opportunities as are available to others.

The definition of normalisation once again raises the important question of labelling. We have come a long way from the use of terms such as imbecile, moron, retardate and defective and have dealt with the nomenclature as the social value of these terms has changed. To accept the person with an intellectual disability as a full and sharing member of the community and society, we may need to rethink our terminology once again. But, this time, we must remove any association with 'haves' and 'have nots' of intelligence.

Many people within our community have career or vocational needs. Many young people leaving school have career needs regardless of intellectual or physical capacity and the high school curriculum does not always prepare them for employment. There are also people within our society who have residential needs, social adjustment needs and self-help and self-care needs. Strangely, they do not share the same low status of others who have been identified as having an intellectual disability.

Within our society there will continue to be a perception of inferiority toward those with an intellectual disability until we remove the concept of *disability* and replace it with that of cultural normalcy; in other words, when we begin to value the strengths of the individual more than the weaknesses. Others in our community are treated this way. For instance, it is obviously acceptable to be without a job, a home, friends and money. It may be inconvenient, but *not* disabling.

Summary

The term intellectual disability is used to identify people who do not have the complete range of abilities considered to be the norm within our society. The problem with this statement is that there is no easy way to establish just what the norm is for our society.

The commonly accepted definition of intellectual disability combines three criteria: significantly below-average general intellectual functioning, impairments in adaptive behaviour and the manifestation of these indicators before the age of 18 years.

Significantly below-average general intelligence refers to an IQ score which is more than two standard deviations below the mean on a standardised test of intelligence; that is, below 70 points. This means that approximately 2.5–3% of the population would be classified as intellectually disabled. Intellectual disability typically is subdivided according to an IQ level convention using the terms mild, moderate, severe and profound (although the term profound is infrequently used in educational settings).

Adaptive behaviour is a difficult term to define. *Maladaptive* implies that people with an intellectual disability are unable to meet society's demands for those behaviours and functions which are considered normal within the community. Complicating the assessment of adaptive behaviour is its changing application with age. What might be adaptive behaviour for a preschooler is not necessarily adaptive for a young adult.

Specific purpose rating scales and behavioural assessments have been prepared by psychologists, social workers and residential care workers to establish appropriate standards. The most commonly used measures include the *Adaptive Behavior Scale* prepared by the American Association on Mental Deficiency and the *Vineland Adaptive Behavior Scale*. While adaptive behaviour is a diagnostic criterion of intellectual disability, there is an apparent lack of commitment on the part of researchers (and some practitioners) to the practical value of adaptive behaviour measures.

The accepted criterion for determining prevalence of intellectual disability has been estimating the proportion of people who have an IQ less than 70 (on the Wechsler scale) or 69 (on the Binet scale). This gives an estimate of 2.27% of the population and various researchers and policy makers have accepted a range of between 2% and 3% (i.e. 20–30 per 1000). However, because of difficulties in sampling and agreeing on a definition of intellectual disabilities, it would seem that a more realistic estimate would be 0.7–1%, giving an Australian prevalence (for a population of 16.6 million) as 166 000, and a New Zealand figure of 34 000 (based on a population of 3.4 million).

Intellectual disability is associated with some recognisable physical and medical problems. However, up to 80% of those classified as having an intellectual disability have no known cause (aetiology) or organic pathology. Cultural–familial intellectual disability is the term used to describe the cause of disability for individuals comprising this group. The remaining 20% represent over 250 known biological or medical causes of intellectual disability. These causes have been grouped into six categories: infections and intoxications, trauma and other physical disorders, metabolism and nutrition, postnatal gross brain damage, chromosomal abnormalities and gestational disorders.

Over the past 30 years, psychologists and educators have followed two dominant conceptual frameworks when programming for remediation and training: one based on behavioural models and the other on cognitive theory.

Behavioural interventions remain an important base for work with children who have a severe intellectual disability, while cognitive approaches to teaching and learning have tended to dominate methods used in mainstream education and with students who have a mild disability.


Special schools for children with an intellectual disability were not established until the second decade of the twentieth century. By the 1950s, the expansion of educational services led to the opening of special schools and classes, the appointment of teachers and the development of special programs. In each state in Australia, and in New Zealand, educational provisions have taken on a local character. However, there are a number of obvious similarities in the ways in which services have been offered. While segregation was the dominant mode of service provision, within the last five years the integration of students with an intellectual disability into regular classes has been adopted as the dominant policy. Early intervention has been promoted widely as an important practice when intellectual disability is diagnosed. Finally, the development of appropriate educational and training programs for students with mild/moderate and those with a moderate to severe intellectual disability has led to diverse teaching approaches and procedures.

Australia's size and population dispersion causes problems for families in remote areas who have a child with an intellectual disability. The serious disadvantages that these families may have experienced have largely been overcome through effective distance education initiatives in all states and territories. Most children who are of school age are involved in some form of educational program, but parents still express needs in the areas of consultancy and social contact.

There are several issues which still require careful examination and resolution. These include providing appropriate support for children in regular school programs, developing programs that enable students to make the transition from school to post-school life successfully and accepting and promoting the rights of people with disabilities.

Further reading

- Alaszewski, A. & Ong, B. N. (eds) (1989) *Residential Care for Mentally Handicapped Children*, Routledge, London.
- Ellis, N. R. & Bray, N. W. (eds) *International Review of Research in Mental Retardation*, Academic Press (A series), New York.
- Gadow, K. D. (ed.) *Advances in Learning and Behavioral Disabilities*, JAI Press (A series), Greenwich, Conn.
- Gillham, B. (1987) *A Basic Attainments Programme for Young Mentally Handicapped Children*, Routledge, London.
- Hall, J., Payne, T. & Simpson, J. (1986) *Legal Rights and Intellectual Disability: A Short Guide*, Redfern Legal Centre, Redfern, NSW.
- Harris, J. (1988) *Language Development in Schools for Children with Severe Learning Difficulties*, Routledge, London.

- 
- Hogg, S. & Sebba, J. (1987) *Profound Retardation and Multiple Impairment: Vol. 1—Development and Learning; Vol. 2—Education and Therapy*, Paul H. Brookes Publishing Co, Baltimore.
- Kelso, R.-A. & Price, S. (1988) *Activities for Babies and Toddlers with Down Syndrome: A Physiotherapy Approach*, Fred and Eleanor Schonell Special Education Research Centre, St Lucia, Qld.
- Laura, R. S. & Ashman, A. F. (eds) (1985) *Moral Issues in Mental Retardation*, Croom Helm, London.
- Menolascino, F. J. & Stark, J. A. (eds) (1988) *Preventative and Curative Intervention in Mental Retardation*, Paul H. Brookes Publishing Co, Baltimore.
- Salisbury, C. L. & Intagliata, J. (eds) (1986) *Respite Care: Support for Persons with Developmental Disabilities and Their Families*, Paul H. Brookes Publishing Co, Baltimore.
- Seed, P. (1988) *Children with Profound Handicap: Parents' Views and Integration*, Falmer Press, Basingstoke, UK.
- Stratford, B. (1989) *Down's Syndrome: Past, Present, Future*, Penguin, Harmondsworth, UK.
- Turnbull, A. P. & Turnbull, H. R. III (eds) (1986) *Families, Professionals and Exceptionality: A Special Partnership*, Merrill Publishing Co, Columbus, Ohio.
- Yule, W. & Carr, J. (eds) (1987) *Behaviour Modification for People with Mental Handicap* (2nd edn), Routledge, London.
- Zigler, E. & Hodapp, R. M. (1986) *Understanding Mental Retardation*, Cambridge University Press, Cambridge.

Practical activities

1. Visit a school or a facility for people with a severe intellectual disability. Discuss with the staff the nature and application of the programs being offered. Look especially at the purpose of activities and how those involved respond to them.
2. Collect any policy documents that relate to the education of students with an intellectual disability in your region or state. Consider how easily these documents would guide teaching practice in the classroom.
3. Talk with a teenager who has an intellectual disability about his or her aspirations for employment or a career. How realistic are these aspirations and how can the community or society assist the person to achieve them?
4. Visit a local College of Technical or Further Education and talk to a counsellor or disability support personnel about the programs that are available for people with an intellectual disability. Try to determine how effective these programs are in meeting the needs of young adults. Are there opportunities to extend these programs to a greater number of people or to provide programs in additional life-skill areas?
5. Parents of people with an intellectual disability often express a number of concerns about the care and education of their children. By searching the

literature or making contact with parents directly, identify the range of anxieties parents have.

Study questions

1. For many years intellectual disability was defined only in terms of IQ. Consider how the concept of adaptive behaviour has changed the characteristics of the group of people who might be labelled as having an intellectual disability. Who might be excluded or (now) included in this group?
2. What effect has improved medical technology had on the incidence of intellectual disability caused by trauma at birth and postnatal damage?
3. What are the classroom implications for the inclusion of students with a mild intellectual disability in mainstream classes? How would classroom practices need to change to accommodate these students? List a number of practical ideas that a teacher or students might employ.
4. List as many advantages and disadvantages as you can that relate to the integration of students with a severe intellectual disability into mainstream classes.
5. What rights can parents of children with an intellectual disability exercise to ensure that their children receive an 'appropriate' education?
6. Identify a number of 'innovative teaching strategies' that can be used in mainstream classrooms which contain students with a mild intellectual disability. What are the features of these programs or strategies that make them appropriate for students with a wide range of skills and abilities?