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Chapter 4

Inclusive education

THE STRATEGY

With the impetus of the UN Convention on the Rights of People with Disabilities, inclusive education is an idea whose time has arrived around the world. Its scope goes far beyond learners with disabilities and has now been extended to cover all learners with additional learning needs, whatever their origins. However, for the purposes of this book, we will focus on learners with additional learning needs arising from disabilities.

At its most basic, inclusive education means educating learners with additional learning needs in regular education settings. However, it means much more than mere placement. Rather, it means putting in place a whole suite of provisions, including adapted curriculum, adapted teaching methods, modified assessment techniques and accessibility arrangements, all of which require support for the educator at the classroom level. In short, inclusive education is a multi-component mega-strategy.

Inclusive education is to be distinguished from integration, which we define as locating learners with additional learning needs part-time in regular classes. Inclusive education is sometimes referred to as mainstreaming, although this term is growing out of favour.

THE UNDERLYING IDEA

The idea of inclusive education reflects two, possibly three, main factors.

First, if it is handled appropriately, learners with additional learning needs will gain academically and socially and will improve their self-esteem. Further, other learners will gain academically, as well as an appreciation of the diversity of their society, a greater recognition of social justice and equality, and a more caring attitude.

Second, it is now generally accepted in most countries that learners with additional learning needs have a right to be educated alongside their peers who do not have special needs. It is thus seen as a matter of equity and social justice.

A third argument is sometimes put forward: that inclusive education is more economically viable, given the expense involved in transporting and accommodating learners in special schools, especially in rural areas.

There are several significant events in the evolution of the idea of inclusive education.

- One of the first expressions of the philosophy occurred fifty years ago when Scandinavian countries began referring to the principle of 'normalization.' This was defined as the process of making available to disabled persons 'patterns of life and conditions of everyday living which are as close as possible to the regular circumstances and ways of life of society.'
- A second set of events that gave impetus to inclusion occurred in the US in the 1960s and 1970s, first with the civil rights movement with its focus on racial equality and, second, with the passage of the Education for All Handicapped Children Act in 1975. This Act included the requirement that 'handicapped' children be educated in the 'least restrictive environment.'
- The third event took place in June 1994 when representatives of ninety-two governments and twenty-five international organizations

met in Salamanca, Spain. The resulting agreement, known as the Salamanca Statement, demonstrated an international commitment to inclusive education for the first time. It called upon all governments to 'adopt as a matter of law or policy the principle of inclusive education, enrolling all children in regular schools, unless there are compelling reasons for doing otherwise'.

- More recently, in December 2006, the 61st session of the United Nations General Assembly confirmed the Convention on the Rights of Disabled Persons, which included a significant commitment to inclusive education. As of October 2018, a total of 187 countries had signed the Convention and 177 had ratified it (notably not the US).

Internationally, there are major obstacles to the implementation of inclusive education. These include such factors as large classes, negative attitudes to disability, examination-oriented education systems, a lack of support services, rigid teaching methods, assessment dominated by a medical model, a lack of parent involvement, and, in some countries, a lack of clear national policies.

Also, while many countries seem committed to inclusive education in their rhetoric, and even in their legislation and policies, practices often fall short. Reasons for the policy-practice gap in inclusive education are manifold and include barriers arising from societal values and beliefs; economic factors; a lack of measures to ensure compliance with policies; the dispersion of responsibility for education; conservative traditions among teachers, teacher educators and educational researchers; parental resistance; lack of skills among teachers; rigid curricula and examination systems; fragile democratic institutions; inadequate educational infrastructures, particularly in rural and remote areas; large class sizes; resistance from the special education sector (especially special schools); and a top-down introduction of inclusive education without adequate preparation of schools and communities.

Further, because cultural values and beliefs, levels of economic wealth, and histories mediate the concept of inclusive education, it takes on

different meanings in different countries, and even within countries. The form taken by inclusive education in any particular country is influenced by the nature of the settlements reached at any one time between (a) traditional values such as social cohesion and group identity, collectivism, images of wholeness, fatalism, hierarchical ordering of society, and (b) modernization values such as universal welfare, equity and equality, democracy, human rights, social justice, individualism and parent choice.

Even in countries where there are substantial resources, the idea of inclusive education does not meet with universal support. In Australia, for example, a 2009 review showed that:

- parents and teachers strongly supported a continuum of services, which included separate facilities;
- parents wanted the option to move their child to a special education setting if the regular class proves to be problematic;
- parents and teachers have reported bullying, peer rejection, inappropriate curricula, failure/inability to differentiate, lack of teacher time, inadequate teacher training, limited funding and resources, students with disabilities being taught by assistants especially in secondary schools.

Conversely, some parents spoke in appreciation of special schools or classes, citing such advantages as:

- positive expectations;
- ease of administering medicines; fully accessible physical environments;
- better behaviour management;
- access to specialists; and
- functioning as a safety valve for schools.

Thus, you have to look beyond the empirical evidence of educational efficacy to other more complex motivations for justifying the retention of non-inclusive educational settings.

THE PRACTICE OF INCLUSIVE EDUCATION

We believe that the success of inclusive education depends upon it being viewed as part of a system that extends from the classroom to the broader society (see Chapter 5). Its success depends on what goes on day-to-day, minute-by-minute in classrooms and playgrounds. It depends on the skills of educators at the school level who, in turn, depend on the leadership of educational administrators at the national, state/provincial and district levels. Ultimately, it depends on the vision of legislators to pass the necessary laws and provide the appropriate resources. In this chapter our focus is on the role of educators.

Although the central feature of inclusive education is the placement of learners with additional learning needs in age-appropriate regular classrooms in the learner's neighbourhood school, it goes far beyond this. In my (DM) lectures on inclusive education (IE) in many countries, I use the following 'magic formula' to describe what is involved:

Inclusive Education = V + P + 5As + S + R + L

- *V = Vision*
- *P = Placement*
- *5As = Adapted Curriculum, Adapted Assessment, Adapted Teaching, Acceptance, Access*
- *S = Support*
- *R = Resources*
- *L = Leadership*

For inclusive education to be successful, we believe that all of these elements must be present. Let us take each of the above elements in turn. They will be illustrated with reference to New Zealand, one of the leading countries in inclusive education:

Vision

Inclusive education requires a commitment on the part of educators at all levels of the system to its underlying philosophy, as reflected in legislation,

regulations and policy documents. New Zealand generally meets this criterion, as reflected in various official documents at the national level. For example, the Education Act (1989) provides that 'people who have special educational needs (whether because of disability or otherwise) have the same rights to enrol and receive education at state schools as people who do not.' And, further, the articulated aim of New Zealand's special education policy is to achieve 'a world-class inclusive education system that provides learning opportunities of equal quality to all children and school students'.

Placement

Placement in an age-appropriate classroom in the learner's neighbourhood school is a necessary (but not sufficient) requirement for inclusive education. It goes further than that, for it is important that learners with additional learning needs in regular classrooms are not then placed in ability-based groups for all their activities, thus creating a form of within-class segregation (see 'micro-exclusion' in the next section on Italy). Rather, we advocate that such learners be involved in a flexible mix of whole class instruction, mixed-ability groups and ability groups, with some individual attention if possible. According to 2014 data on school enrolments in New Zealand, of the students making up the 1.1 per cent categorized as having high needs (i.e., severe disabilities), only one-third were being educated in special schools. The remaining two-thirds were placed in regular schools in special classes or regular classes.

Adapted curriculum

Making appropriate adaptations or modifications to the curriculum is central to inclusive education and is probably the biggest challenge educators face in creating inclusive classrooms. The curriculum in an inclusive classroom has the following features:

- It is flexible, relevant and adjustable to the diverse characteristics and needs of learners.
- It is a single curriculum that is, as far as possible, accessible to all learners, including those with additional learning needs. (Conversely,

additional learning needs are created when a curriculum is not accessible to all learners.)
- It includes activities that are age-appropriate, but are pitched at a developmentally appropriate level.

Within your inclusive classroom, it is likely that you will have learners who are functioning at two or three levels of the curriculum. This means that you will have to use multi-level teaching or, at a minimum, make adaptations to take account of the diversity within your classroom. Of particular relevance to inclusive education, the New Zealand curriculum includes the following as one of eight guiding principles: The curriculum is non-sexist, non-racist, and non-discriminatory; it ensures that [all] students' identities, languages, abilities, and talents are recognized and affirmed and that their learning needs are addressed. Students with 'high or very high needs' (a term preferred to 'disability') are those who have been determined to 'require intervention from specialists and/or specialist teachers for access to the New Zealand Curriculum, and/or adaptation of curriculum content.' It is envisaged that they need varying degrees of adaptation to curriculum content, ranging from total adaptation of all curriculum content to significant adaptation to most curriculum content, as specified in their Individual Education Plans (IEPs).

Adapted assessment

Just as learners with additional learning needs are expected to participate and progress in the general curriculum, albeit with appropriate modifications and adaptations, so too are they increasingly being expected to participate in a country's national or state assessment regimes. Basically, there are two types of adjustments to nation- or state-wide assessments.

- First, assessments with accommodations involve making changes to the assessment process, but not the essential content. Accommodations include alterations to the setting, timing, administration and types of responses in assessments.

- Second, alternate assessments are defined as assessments 'designed for the small number of students with disabilities who are unable to participate in the regular State assessment, even with appropriate accommodations'. They refer to materials collected under several circumstances, including: teacher observations, samples of students' work produced during regular classroom instruction, and standardized performance tasks.

Assessment of children with additional learning needs should result in IEPs. These should be regularly reviewed (e.g., every six months) and should involve the child's parents, educators and specialists. An IEP does not require that a learner be given individual teaching. Rather it means that an educator is always aware of the individual needs of the learner. In New Zealand, the New Zealand Qualifications Authority, for example, approves Special Assessment Conditions (SACs) to provide extra help for approved secondary students when they are being assessed for their National Certificates of Educational Achievement. These fall within the assessments with accommodations category outlined above. SACs are intended to remove barriers to achievement to give students with special educational needs a fair opportunity to achieve credits, but without providing them with an unfair advantage over other candidates. Examples include the use of a reader, writer or computer; rest breaks; and Braille or enlarged print papers. Eligible students are those with a permanent or long-term medical, physical or sensory condition and/or specific learning disability that directly impacts on their ability to be assessed fairly.

Adapted teaching

Educators are increasingly expected to be responsible not only for helping students to achieve the best possible outcomes, but also for using the most scientifically valid methods to achieve them. Indeed, in the United States, the No Child Left Behind law required teachers to use 'scientific, research-based programs,' defined as (1) grounded in theory; (2) evaluated by third parties; (3) published in peer-reviewed journals; (4) sustainable; (5) replicable in schools with diverse settings; and (6) able to

demonstrate evidence of effectiveness. Inclusive education challenges educators to develop a wide repertoire of teaching strategies. These, of course, are the focus of this book and we won't discuss them here. It is important to note at this juncture the critical role teacher education plays in enabling inclusive education.

Acceptance

Inclusive education relies on educators, learners and their parents accepting the right of learners with additional learning needs to be educated in general education classrooms and to receive equitable resourcing. In our experiences, we have found such acceptance to be widespread, but not universal. We have also found that the main factor that brings about shifts towards positive attitudes is the face-to-face, day-by-day contact with learners with additional learning needs. As an educator, you play a very important role in modelling accepting attitudes through your behaviour, particularly as you deal with any challenging events that might arise as your students learn to deal with diversity. We take up the theme of acceptance in the section on the learning and teaching context in Chapter 5. It is also discussed in Strategy 13, where a link between social emotional learning and inclusion is explored. From the evidence presented in this chapter, it is clear that there is widespread (but not universal) acceptance of inclusive education in New Zealand.

Access

Access is a very broad concept, ranging from access to education, access to the adapted curriculum and assessment (discussed above), and adequate physical access to and within classrooms. The latter is provided through such features as ramps and lifts, adapted toilets, doorways that are sufficiently wide to take wheelchairs, and adequate space for them to be manoeuvred in classrooms. Physical access also involves ensuring that all the elements of the indoor physical environment that may affect students' ability to learn are optimal. It involves attending to such matters as the design and arrangement of furniture, acoustics, lighting, temperature, air quality and safety (see Strategy 24). According to

Standards New Zealand, the design of buildings (including schools) 'shall be carried out by applying the principles of approachability, accessibility and usability to the overall design to ensure that people with disabilities, visitors and workers are able to enter and carry out normal activities and processes in buildings.' More specifically, the Ministry of Education, after consultation with the school's board and the student's caregiver, provides funding for any reasonable property modifications (for example, ramps, ablution facilities, lifts) required to provide access for students with a physical disability.

Support

Inclusive education requires support from a team of professionals, as well as parents/caregivers. Ideally, this team would consist of (a) a general educator, receiving advice and guidance from (b) a specialist adviser (referred to as SENCOs in some countries, such as the UK, and as Resource Teachers Learning and Behaviour (RTLB) in New Zealand), access to (c) appropriate therapists and other professionals (e.g., psychologists, hearing advisers, social workers, physiotherapists, speech and language therapists and occupational therapists), and (d) assistant teachers (referred to as paraprofessionals, learning support assistants or teacher aides in some countries). The composition of such teams would vary according to the needs of the particular learners in the inclusive classroom. We realize that, in the case of scarce resources, this ideal may not be able to be accomplished and that you may have to make the best of what can be afforded. Thus, as an educator working in inclusive classroom, you will need to acquire teamwork skills. These include respect for the contributions that other people can make, openness to new ways of looking at teaching learners with additional learning needs (indeed, all learners), working with parents/caregivers, and being prepared to explain and justify your own ideas (Strategies 9 and 10). In New Zealand, if a child has 'high or very high needs', the Ministry of Education directly funds a higher level of support for them through a range of schemes or services. These include the following:

1. The Ongoing and Reviewable Resourcing Scheme, which provides support for children with high or very high needs through additional teachers, teachers' aides, specialists and items a child might need in the classroom.
2. The Communication Service, which provides support for children who have difficulties with talking, listening and understanding language.
3. The Severe Behaviour Service, which provides support for children experiencing severe behaviour difficulties.
4. The School High Health Needs Fund, which provides a teacher's aide for a child with a medical condition that requires special care in order for them to be able to attend school safely.

As well, classroom teachers might be supported by: (a) a special education needs coordinator (SENCO) who can work with parents and a child's teacher to develop a suitable programme for a child; (b) teachers, teacher aides or other services and support the school buys through its Special Education Grant; and (c) an RTLB employed by clusters of schools to provide classroom teachers with special teaching strategies, or to institute school-wide programmes.

Resources

Clearly, inclusive education requires high levels of resourcing. We believe, however, that it requires no more resources than would be available to support a learner with additional learning needs in a special school. In other words, what is required is a redistribution of resources. In New Zealand, resource allocation is of two kinds. The first system involves identifying individual students who meet the Ministry of Education's criteria for the approximately 3 per cent of learners with the highest needs. The Ministry is responsible for determining the level and nature of support required by such students and for allocating the resources accordingly. An important step to facilitate inclusion was the decision taken in the late 1980s that resources should follow these students, whether they are in special or regular schools (similar to the 'backpack system' in the Netherlands). The second system is a population-based one in which

schools receive Special Education Grants based on the number of children in the school and the socio-economic status of its catchment. It is assumed that these grants would be sufficient to cater for the extra costs of teaching students with moderate special needs.

Leadership

To bring all of the above elements together, leadership is required at all levels: government, national education departments or ministries, provincial or state departments, districts, school principals and classroom teachers. All should be able to explain the underlying philosophy and show by their actions that they are committed to its successful implementation. School principals, along with teachers, have a responsibility to develop an inclusive culture in their schools. For example, a Canadian study found that the strongest predictor of effective teaching behaviour in inclusive education settings was the subjective school norm as operationalized by principals' attitudes towards heterogeneous classrooms. In its 2014 review of inclusive practices for students with special needs in New Zealand schools, the Education Review Office (ERO) noted that 'leaders of inclusive schools set high expectations for students and ensured that staff understood their responsibility to meet the needs of all their students'. Further, in an earlier report, the ERO found that the quality of leadership was more important than funding in differentiating the level of inclusiveness in schools.

ITALY - A LEADER IN INCLUSIVE EDUCATION

Italy has long been regarded as a leader in the field of inclusive education, with almost every learner with a disability being included in mainstream education. By law, there are no special schools or classes, although some 0.4% of pupils with disabilities attend rehabilitation centres, financed by local health authorities.

Inclusive education, known as *integrazione scolastica*, started in 1971 when, under Law 118, compulsory education had to take place in regular classes, except in the case of mental deficiencies or physical impairments so

severe as to prevent learning or integration in common classes. Later, in 1977, Law 517 legislated to implement procedures to integrate handicapped pupils by providing 'special teachers', both in primary and middle schools.

Currently, every child with a disability is guaranteed a specialized support teacher in addition to the class teacher (sometimes referred to as 'curricular teachers'). Support teachers are initially trained as curricular teachers and receive additional, specialized training. In a system of co-teaching, they work with curricular teachers and are intended to participate in all the activities concerning the class as a whole, such as planning and assessment.

Currently, Law 104 of 1992 is the main framework for all disability issues. It guarantees specific rights for people with disabilities and their families, provides assistance such as free transport from home to school and access to school buildings, stipulates full integration and the adoption of measures for prevention and remedial work, as well as ensuring social, economic and legal protection. Also relevant here is a requirement in the 2009 Guidelines of the Ministry of Education which states that 'it is the whole school community that must be involved in the process [of inclusive education] … and not just a specific professional figure to whom the task of integration is exclusively delegated.'

More recently, a Ministerial Directive of 27 December 2012 broadened the focus of inclusive education to cover all kinds of difficulties at school whether permanent or temporary. As well as (a) severe physical or intellectual impairments diagnosed by the local health units, it covered (b) specific learning disorders, specific developmental disorders, and (c) socio-economic, cultural or linguistic disadvantages. However, extra funding and specialist school staff are not provided to schools for the second and third subcategories of students.

On 7 April 2017, the Council of Ministers approved a decree on the inclusion of pupils with disabilities, which included (a) the provision of compulsory initial and in-service training for school leaders and teachers on

pedagogy, didactics and organization for inclusive education, and (b) the identification of in-service training requirements on school inclusiveness for administrative, technical and auxiliary staff. To facilitate such training, the national Ministry of Education founded a network of Territorial Support Centres in 106 schools spread all over the country. These are staffed with teachers and researchers specialized in technologies for inclusive teaching.

Further evidence of Italy's commitment to inclusive education is reflected in the requirement for each school to draw up an Inclusion Plan within the framework of the Three-Year Educational Plans. In keeping with this requirement, school inclusiveness has been introduced in school evaluation procedures. Further, schools cannot refuse any enrolments and the law does not allow for streaming of pupils until the age of sixteen (the age limit for compulsory education). Rather, schools are expected to establish classes of mixed ability and equally distribute pupils with disabilities (usually one or a maximum of two in each class). Grade retention is highly unusual in Italy.

Despite the obvious commitment to inclusive education as a policy, some writers have argued that practice lags behind policy. For example, it has been noted that the treatment of students with disabilities depends on the place of residence. Another weakness is the perpetuation of 'micro-exclusion' of some students at the classroom level. This is reflected, for example, in the widespread use of so-called 'support rooms', which are separate classrooms where support teachers take pupils with special needs to work on learning tasks which may be disconnected with their developmental goals - a system referred to as 'pull-out and push-out'. Further, constitutional judges have pointed to the contradictions of a system that, while it ensures the right to education on paper, it can easily be undermined by arguments based on financial constraints, which impact on the number of hours of support teachers' time available for students with additional learning needs. Finally, it has been reported that

support teachers often feel marginalized, isolated and professionally dissatisfied.

However, research has shown that, despite concerns, Italian teachers hold very positive attitudes towards students with disabilities and the single-track inclusive system their country has adopted. Similarly, positive attitudes have been found among parents.

THE EVIDENCE

There is a considerable, almost bewildering, body of research that addresses the question of how inclusion impacts on the achievements of learners with and without additional learning needs. In interpreting these studies, several cautions must be taken into account. These include the following: (a) some of the earlier studies may not be relevant to current conditions, (b) many of the studies compare placements only and do not 'drill down' into the nature of the educational programmes the learners received, (c) many studies are methodologically flawed (also see Chapter 2), and, of course, (d) all studies are specific to the context in which they were conducted.

In general, studies have come up with mixed results, the majority reporting either positive effects or no differences for inclusion. (Some would argue that if there are no differences, this is also an argument for inclusion: why have segregated education programmes when they are no better than placement in regular classes?) This situation is reflected in the World Report on Disability, which stated: 'The evidence on the impact of setting on education outcomes for persons with disabilities is not conclusive'.

The following is a representative sample of research carried out in this area:

Positive findings

- Perhaps the most comprehensive summary of the evidence of inclusive education was carried out in 2016 by Thomas Hehir and his

colleagues. They reviewed results from more than 280 research studies conducted in 25 countries, concluding as follows: We found consistent evidence that inclusive educational settings—those in which children with disabilities are educated alongside their non-disabled peers—can confer substantial short- and long-term benefits for children's cognitive and social development. The magnitude of the benefits of inclusive education may vary from one study to another, but the overwhelming majority either report significant benefits for students who are educated alongside their non-disabled peers or, at worst, show no differences between included and non-included students. The research evidence also suggests that in most cases, being educated alongside a student with a disability does not lead to negative consequences for non-disabled students. In fact, research on effective inclusive schools indicates that inclusion can have important positive benefits for all students. And further, a large body of research indicates that included students develop stronger skills in reading and mathematics, have higher rates of attendance, are less likely to have behavioral problems, and are more likely to complete secondary school than students who have not been included. As adults, students with disabilities who have been included are more likely to be enrolled in post-secondary education and to be employed or living independently… Including students with disabilities can support improvements in teaching practice that benefit all students. Effectively including a student with a disability requires teachers and school administrators to develop capacities to support the individual strengths and needs of every student, not just those students with disabilities.

- In an early meta-analysis, eleven empirical studies carried out between 1975 and 1984 were analysed. It was shown that mainstreamed disabled students (mentally retarded, learning disabled, hearing impaired and mixed exceptionalities) consistently outperformed non-mainstreamed students with comparable special

education classifications. Two types of mainstreaming were included: part-time with occasional pull-out resource class attendance, and full-time inclusion in general classes. Of the 115 effect sizes calculated, two-thirds indicated an overall positive effect of mainstreaming. The overall effect size was 0.33, which translates into a gain of thirteen percentiles for students in mainstreamed settings.

- A Canadian study of third-grade learners with 'at risk' characteristics (e.g., learning disabilities, behaviour disorders) compared the impact on achievement of a multi-faceted inclusive education programme. The intervention group (N=34) received all instruction and support in general education classrooms, while the comparison group (N=38) received 'pull-out' resource room support. The intervention group also received a programme that included collaborative consultation (Strategy 5), cooperative teaching (Strategy 6), parent involvement (Strategy 10) and adapted instruction in reading, writing and mathematics. The comparison group continued using general education teaching methods characterized by whole-class instruction and minimal cooperation between the general and special teachers. Significant effects were found in the writing scores for the inclusive education group. The general education learners were not held back by the presence of the at-risk students in the classroom; on the contrary, their reading and mathematics scores benefited from the additional interventions offered by the programme.
- A US study addressed the effects of an inclusive school programme on the academic achievement of learners with mild or severe learning disabilities in grades 2-6. The experimental group comprised seventy-one learning disabled students from three inclusive education classrooms. In these classrooms, special education teachers worked collaboratively with general education teachers, each learner's programme was built upon the general education curriculum, and instructional assistants were used to

support the learners with special educational needs. The control group of seventy-three learning disabled students were in classrooms which were to become part of the inclusive programme, but in which the students received traditional resource class programmes. Results showed that the students with mild learning disabilities in the inclusive classrooms made significantly more progress in reading and comparable progress in mathematics, compared with those in the resource classes. Students with severe learning disabilities made comparable progress in reading and mathematics in both settings.

- In another US study, more than 1,300 students with disabilities aged between six and nine years within 180 school districts were studied. The results suggested a strong positive relationship between the number of hours students spent in general education and achievement in mathematics and reading.
- In a US study of the effects of inclusion on learners with severe disabilities, forty students in two groups were assessed across two years of inclusive versus self-contained programmes. The inclusive group was found to have made significant gains on a developmental measure and in social competence compared with the segregated group.
- In a study focused on teenage students with disabilities, the National Longitudinal Transition Study followed 11,270 thirteen- to sixteen-year-old students over ten years. It found that students with disabilities who took more academic classes in general education settings experienced greater growth on measures of academic skills than peers who spent more time in separate special education programmes. It also showed that students with disabilities in inclusive settings attended school an average of three more days per year, were eight percentage points less likely to receive a disciplinary referral, and were four percentage points more likely to belong to school groups.

- Similar findings were recorded in a recent longitudinal study in Washington State to investigate the relationships among career and technical education enrolment, inclusion in general education, and high school and post-secondary outcomes for students with learning disabilities. It found that students who spent more time in general education classrooms in high school had higher rates of on-time graduation, college attendance and employment than observably similar students with learning disabilities who spent less time in general education classrooms in those grades.
- Children with disabilities also benefit from being included in pre-kindergarten programmes. A study of 757 three- and four-year-old students in the Midwestern United States found that the language skills of students with disabilities benefited substantially from having the opportunity to attend preschool with non-disabled students.
- A Dutch study reported on the differences in academic and psychosocial development of at-risk pupils in special and mainstream education. It found that pupils in special education classes did less well in academic performances and that these differences increased as the pupils got older. In psychosocial development, variables such as social behaviour and attitudes to work also favoured pupils in regular classes.
- In another Dutch study, the development was compared of more than 200 matched pairs of seven- and eight-year-old students with learning and behavioural difficulties or mild intellectual disability who were included in general or special education schools. The researchers followed these students for four years and found that those included in general education made substantially greater academic progress than did their counterparts in special education programmes.
- In a study of a special unit in a Cypriot school, it was noted that educating students with special needs in such a unit can lead to marginalization. Interviewing fourteen of these children, and

comparing their social lives to those of a matched group of fourteen educated in regular classrooms, the authors found that the former had little opportunity to mix with their peers and their school lives were dominated by children and adults involved in special education. They identified as important friends those who were in their home network, whereas those typically educated children identified as their important friends others within their class or school.

- A Dutch study collected information on the reading, writing, mathematics, and language skills, of a random sample of 160 children with Down syndrome. They then collected similar information four years later and found that the amount of time a student spent in mainstream classes was a significant predictor of the child's academic skill development, with particularly strong effects on the reading ability of younger children.
- A 2004 study in England showed that the presence of relatively large numbers of learners with special educational needs (not analysed by category) in ordinary schools did not have a negative impact on the achievement of general education learners at the local education authority level. Rather, attainment seemed to be largely independent of levels of inclusive education. Other factors, such as socio-economic status, gender, ethnicity and language, seemed to be much more significant. Furthermore, the researchers found evidence that learners with special educational needs were making good progress academically, personally and socially. They also found some evidence (chiefly in the views of teachers and pupils) that inclusion can have positive effects on the wider achievements of all learners, particularly on their social skills and understanding. On the other hand, they also found some indications that having special educational needs might be a risk factor for isolation and for low self-esteem.
- More recently, Polish researchers carried out a meta-analysis to establish how the presence of students with special educational

needs in regular classrooms impacts students without special educational needs. They meta-analysed 47 studies, covering a total sample of almost 4,800,000 students. The overall effect was positive and statistically significant, but weak, d=0.12.

- Another group of authors systematically review the literature bearing on evidence as to whether the placement of learners with special educational needs within mainstream schools had an impact on the academic and social outcomes for learners without special educational needs. A total of twenty-six studies met the researchers' criteria for selection. Overall, the findings suggested that there were no adverse effects of the former on the latter, with 81 per cent of the outcomes reporting positive or neutral effects.
- An English study produced similar results, finding no evidence that the presence of higher proportions of learners with special educational needs in secondary schools lowers the performance of general education learners. Indeed, as with the previous study, many educators in those schools believed that the inclusive education strategies used actually contributed to improved overall educational achievement.
- The impact of inclusion on the achievement of general education elementary school students was also investigated in a US study. Two groups were studied: thirty-five learners whose classes included five students with learning disabilities, and 108 who had no classmates with special educational needs. Measures of academic achievement were taken over a three-year period at three points: pre-inclusion, inclusion and post-inclusion. The researchers found no significant differences between the two groups of learners on basic skills of language arts, reading and mathematics. Certainly, there was no evidence of any decline in the academic or behavioural performances of learners in the inclusive setting.
- An example of an evaluation of a system-wide implementation of inclusive education is one reported in Sweden. This involved a municipality, Essunga, whose educational achievement had been

ranked in the bottom position in 2007 and moved to a top position in 2010. This change was attributed to the implementation of inclusive education, with ability grouping and special education being abandoned and all children included in normal classroom activities. This freed up special education resources, enabling them to be added to regular classes. Teachers attributed the improvements to greater awareness of research, curriculum and teaching methods, which, they acknowledged, were dependent on the idea of inclusion.

Mixed, or neutral, findings

- According to Hattie's recent synthesis of five meta-analyses of 'mainstreaming,' the average effect size was 0.28. He reported one study that showed more positive outcomes for mathematics (effect size: 0.22) than reading (0.12), and more positive outcomes for students classified as mentally retarded (0.47) than learning disabled (0.13).
- In one of the earliest meta-analyses, fifty studies compared general (i.e., inclusive) and special class placements. It was found that placement in general classes resulted in better outcomes for learners with mild mental retardation, but poorer outcomes for students with learning disabilities or behavioural/emotional problems.
- A comprehensive review of inclusion research involving learners with autism also reported mixed results. In one set of studies, those who were fully included, (a) displayed higher levels of engagement and social interaction, (b) gave and received higher levels of social support, and (c) had larger friendship networks. This was counterbalanced, however, by another study that found that these learners were more frequently on the receiving, rather than the giving, end of social interactions. The review also described a study in which the effect of inclusive education, compared with segregated education, on the language ability of autistic learners was evaluated. The fact that there were no differences between the two placements

was interpreted as supporting inclusion, since segregated placements were shown to be of no benefit.

- Several studies have found that quality of instruction, rather than placement, is the most important predictor of learner achievement. For example, in one study of mathematics achievement of students with hearing impairments, placement in regular or special classes did not seem to impact on achievement. Rather specific features of quality placement included a supportive teacher, regular and extensive reviews of material, direct instruction and a positive classroom environment.
- A European reviewer summarized empirical findings about different educational interventions, comparing inclusive and separate settings, based mostly on Germany, Austria and Switzerland. He concluded that inclusive settings scored more highly on academic performance for students with learning disabilities. However, in some studies either no differences could be found between inclusive and separated settings or mixed effects were reported.
- A recent review focused on fourteen studies of the impact of inclusion in physical education (PE) on students with and without disabilities. It was concluded that inclusion in PE does not affect the learning outcomes of students without disabilities when given support or when a solid curriculum is used. However, those with disabilities experienced less motor engagement than their peers without disabilities and had mixed social outcomes.
- A Dutch review looked at students' attitudes towards peers with disabilities. A total of twenty studies from seven different countries met the criteria. The results showed that students generally held neutral attitudes towards peers with disabilities, with some holding positive attitudes and some holding negative attitudes. Students with behaviour problems and intellectual disabilities (particularly the former) were found to be particularly vulnerable to negative attitudes of peers.

- A recent German study investigated the social participation of seventh-grade students with hearing impairments in inclusive classrooms. Data from sixty-two seventh-grade students across three classrooms and teachers were collected via questionnaires and from regular and special needs teachers via interviews. Results indicated that students with hearing impairments feel less socially integrated and less accepted by their peers. They did, however, interact more with other students with special needs and most had friends in their class. Teachers evaluated social integration, acceptance, interaction and friendships of their students with hearing impairment as average or as above average.

Negative findings

- One of the few studies to yield negative findings examined the peer effects of classmates with disabilities on five non-cognitive scales for classmates without disabilities in elementary schools. This US study found that students with a greater number of classmates with disabilities had higher externalizing and internalizing behavioural problems and lower frequencies of self-control, approaches to learning and interpersonal skills.
- Another study with negative findings examined the question of which school environment—special or mainstream school—is more favourable for deaf and hard-of-hearing students in Sweden. A total of 7,865 adolescents (thirteen to eighteen years of age) answered a survey about the life and health of young people in a county in Sweden. The results showed that both boys and girls in the hard-of-hearing groups rated their well-being lower and were less satisfied with their lives than pupils without disabilities. They also show that the hard-of-hearing boys and girls attending special school were more satisfied with their lives and to a greater extent felt included both socially and academically than students in mainstream school.

- A third study reviewed the perspectives of students without special needs around the social inclusion of students with physical impairments in mainstream classrooms. Ten articles were included in this review. The findings suggested that students without special needs avoid interacting with students with physical impairments, and are less accepting and less willing to befriend a student with a physical impairment. Combined, there were thirteen individual, interpersonal and contextual factors influencing these perspectives, which should be considered to inform future inclusion practices.

CONCLUSION

Inclusive education is a complex and controversial approach to educating learners with additional learning needs. If it is properly implemented, it can bring about academic and social benefits to all learners. The major risk associated with inclusive education is that it is implemented only in a partial form. As we emphasized above, for it to succeed, inclusive education goes well beyond placing a learner with additional learning needs in a general education classroom and hoping for the best.

A second risk is that it may be implemented without asking: what is the best education that this particular learner with additional learning needs can receive at this time and in this place? Ultimately, we must be concerned with providing an education that ensures the best quality of life for all learners. While we believe that inclusive education holds out the best promise in general, we recognize that in some limited circumstances it may not be the best alternative.

Gern! Hier ist das gesamte Kapitel „Strategy 4: Formative assessment and feedback“ 1:1 im englischen Original, sauber strukturiert und gut lesbar aufbereitet (ohne die Referenz-Nummern im Text, um den Lesefluss zu erleichtern):

Chapter 10

Rating ★★★★

Strategy 4: Formative assessment and feedback

'Regularly check and inform learners of their progress'

THE STRATEGY

Formative assessment and feedback is a combined strategy in which you (a) probe for knowledge within lessons (sometimes referred to as interactive formative evaluation or performance monitoring), (b) give frequent feedback to learners (sometimes referred to as corrective feedback), and (c) adjust your teaching strategies, where necessary, to improve learners' performances. While it is possible to have formative assessment by itself, feedback should always be preceded by formative assessment.

This strategy relates to external task demands and external responses in the Learning and Teaching Model outlined in Chapter 6. Also of relevance is the chapter on neuroscience, particularly the section on stress. It fits within the classroom level of the Ecological Model presented in Chapter 5.

'Cybernetics' is the name given to the study of feedback, the term coming from the Greek word *kubernētēs*, meaning 'steersman'. As Tom Stafford writes, the human brain seems to be the arch embodiment of this cybernetic principle, with feedback playing a prominent role in the adaptation of humans to their environments. 'Thanks to feedback we can become more than simple programs with simple reflexes, and develop

more complex responses to the environment... Feedback allows animals like us to follow a purpose!'

THE UNDERLYING IDEAS

Assessment serves educational purposes

Assessment is increasingly being seen as serving educational purposes by promoting learning and by guiding teaching. It should provide the best possible account of what a learner knows, can do, or has experienced. Ideally, assessment is aligned with your intended learning outcomes, which are usually aligned with the curriculum. In the case of learners with special educational needs, Individual Education Plans are used to define the learning outcomes you are seeking to achieve.

How does formative assessment differ from summative assessment?

Briefly, summative assessment is concerned with evaluating learners' performances at the end of a module or a course. The results count towards making a final judgement on what the learners have achieved. Formative assessment evaluates learners' progress during a course or module so that they have opportunities to improve. It is as much assessment for learning as assessment of learning.

In its pure form, formative assessment does not contribute to the overall grade. However, sometimes assessment serves both summative and formative purposes. How you classify the two types depends on the extent to which assessment leads to feedback that enables learners to improve their performances. The more it does this, the more justified is its classification as formative assessment.

The importance of probing for knowledge

We know that mere exposure to information or concepts does not guarantee that students will learn them. Rather, it is helpful if you frequently probe for knowledge in a variety of ways and at different times to ensure that learners are understanding, retaining and generalizing new concepts.

By systematically using formative assessment, you will gain a better idea of your learners' needs and be able to 'fine-tune' your teaching.

The value of feedback

The whole point of formative assessment is to provide feedback (a) to learners and (b) to you, the educator. Thus, it is important that you frequently monitor and give regular explicit feedback to your students on their levels of understanding or you ensure that such feedback is given by their peers in group work. Without frequent probes of learners' understanding, you will have no idea of the effectiveness of your teaching. Also, giving prompt feedback prevents learners from wasting their time practising errors.

Feedback is information about the task that fills a gap between what is understood and what is aimed to be understood. It can lead to increased effort, motivation or engagement to reduce the discrepancy between the current status and the goal; it can lead to alternative strategies to understand the material; it can confirm for the student that they are correct or incorrect, or how far they have reached the goal; it can indicate that more information is available or needed; it can point to directions that the students could pursue; and finally it can lead to restructuring understandings.

THE PRACTICE

Formative assessment (sometimes referred to as 'formative evaluation')

Formative assessment is based on the idea that teaching and learning must be interactive. It allows you to diagnose why some learners do not succeed and to adapt the curriculum and redesign your teaching to rectify any problems. For example, you may decide to reteach a concept, change the pace of a unit, clarify the content, and review material on which your students experience difficulty.

There are three things you should consider when you plan to use formative assessment: (a) deciding what information you need, (b) deciding when you want that information, and (c) selecting the means for collecting the data.

- **Deciding what information you need** requires that you know your learners, how they best learn, and what objectives you have for them. Formative assessment should provide descriptions of what has or has not been achieved. This is sometimes referred to as criterion-referenced assessment. Several countries have gone down this track. For example, in Scotland the National Certificate provides information on whether or not learners have mastered each specified learning outcome on each module of work. In New Zealand the National Certificate of Educational Achievement serves the same purpose.
- **Determining when you need the information.** This may be before a lesson or unit, when you pre-test students to determine what they already know about the topic. Or it may be during your teaching of it, when you focus on the interactions between yourself and the learners or upon the interactions among the learners. Or it may be after instruction, when you seek to determine if your objectives have been achieved. As a rule of thumb, you should try to make at least one assessment per subject per learner per week.
- **Selecting the means for collecting information.** This typically includes a range of approaches for assessing learners' knowledge and skills, some formal and others informal. These include checklists, quizzes, classroom tests, portfolios, observations, learning journals, assignments, observations and conferences/interviews with individuals or small groups. Portfolios are particularly valuable since they can be built on throughout the year and can show the development of thinking.

Feedback (sometimes referred to as 'formative feedback')

In formative assessment, you probe for knowledge within lessons and give frequent feedback. According to John Hattie and Shirley Clarke, feedback may be defined as information about the task that fills a gap between what is understood and what is aimed to be understood. They go on to state that:

- it can lead to increased effort, motivation or engagement to reduce the discrepancy between the current status and the goal;
- it can lead to alternative strategies to understand the material;
- it can confirm for the student that they are correct or incorrect, or how far they have reached the goal;
- it can indicate that more information is available or needed;
- it can point to directions that the students could pursue; and finally it can lead to restructuring understandings.

It is important that you convey a sense that feedback is intended to be helpful, not embarrassing, and that it is part of the joint search for success. For this reason, errors can be tolerated as they provide good information on learners' current levels of understanding and misunderstanding. Bridging the gap between the two is your task as a teacher and a challenge to learners.

Providing plenty of feedback does not necessarily mean that you should use lots of tests and be overly prescriptive in giving directions to learners. Rather, it means providing information on how and why learners understand or misunderstand, and how they can improve. This can be made an enjoyable, fun process.

In a class of mixed ability, it is all too easy to avoid asking questions of students with learning difficulties partly to avoid embarrassing them, but also to ensure that the lesson flow is not too disrupted. The net effect of this is that such students can go for whole stretches of time without being required to show their level of understanding. Take active steps to avoid this situation.

Feedback can come from a variety of sources: educators (the main focus of this description), peers, books and other written resources, computers, parents and learners themselves. Flash cards are a commonly used and effective form of self-directed feedback.

The purposes of feedback are to motivate learners, to inform them how well they have done, and, above all, to show them how they could improve. To achieve these purposes, feedback should be:

- **timely:** provide feedback as soon as possible after the assessment has been conducted, so that the material is still fresh in the learners' minds;
- **explicit:** in your feedback, describe where the learner was accurate or inaccurate: 'Good, you used the right formula here.' 'I can see where you went wrong here: you confused New Mexico, the US state, with the country of Mexico. Please check this in your atlas.' This has been referred to as 'instructive feedback';
- **focused on strategy use,** rather than on the learner's ability or effort (i.e., "You got it right because you applied the steps in the right order", rather than "You really tried hard on this problem.") – this might mean briefly reviewing the strategy, rather than telling learners the correct answer;
- **adjusted to the complexity of the task:** research has shown that for low-level skills such as memorizing spelling words, immediate 'correct/incorrect' feedback (for example delivered via a computer) is more effective than delayed feedback. On the other hand, more complex tasks, such as drawing conclusions from two statements, lend themselves to more complex feedback, which includes reminding learners about the relevant strategies;
- **provided in manageable units** to avoid cognitive overload; and
- **able to be used by learners:** you may need to teach learners how to use feedback and to periodically check that they use previous feedback in their subsequent work.

For low-achieving learners, you should consider using:

- immediate feedback when learning new tasks;
- directive (or corrective) feedback, rather than hints;
- scaffolding, with early support and structure.

Conversely, for all learners, you should avoid:

- making normative comparisons;
- giving overall grades;
- interrupting the learner if he or she is actively engaged on a task;
- presenting feedback that discourages the learner or threatens his or her self-esteem.

Let's elaborate a little on the last point. As we shall note in the evidence section below, feedback can sometimes have negative effects on attainment. How can this be? Neuroscience provides some leads. There is some evidence that anything that lays blame is likely to trigger our brain's highly reactive threat response, launching a cognitive resource-intensive defence. As recent writers put it, 'Focusing people on their shortcomings or gaps doesn't enable learning. It impairs it.' This suggests that feedback should focus more on what the learner did well, rather than what they did wrong.

Neuroscience research suggests that negative feedback is potentially emotionally harmful because it poses a social-evaluative threat. As we pointed out in Chapter 3, if stressors are excessive they can elicit elevated levels of the fight-or-flight hormone cortisol, which can take some time to revert to its baseline state. Rather, feedback should elicit endorphins and dopamine if it is to serve learning. A related point is the role of the neurochemical oxytocin, which increases our emotional connection to others and our trust in them. Oxytocin can be promoted or inhibited by our interactions with others. A primary inhibitor is a stress hormone called epinephrine. During high stress (e.g., negative feedback), epinephrine spikes heart rate and blood pressure, inhibiting our ability to connect to and feel empathy for and trust in others. Interestingly, however, moderate stress increases oxytocin release.

THE EVIDENCE

Although formative assessment and feedback are usually considered together as a package, we will summarize the evidence separately. Both strategies have yielded high effect sizes, hence our four-star rating.

Formative assessment/evaluation

- Hattie's synthesis of meta-analyses of providing formative evaluation (which unfortunately did not provide separate reference to learners with additional educational needs) arrived at an effect size of 0.90.
- In an early meta-analysis of twenty-one studies of the effects of formative evaluation, which was incorporated into Hattie's synthesis, an effect size of 0.70 was obtained. However, when formative evaluation was combined with positive reinforcement for improvement (i.e., feedback), the effect size was even higher at 1.12.
- A US study used a formative evaluation system with low-achieving learners in a large urban school system. It resulted in significant gains in math achievement.
- There is evidence to show that teachers trained in formative assessment are more open to changing their instructional strategies to promote learners' mastery of material. Furthermore, it has been shown that without formative assessment, teachers' perceptions of learners' performances are often erroneous.
- The UK's Education Endowment Foundation reported favourably on Embedding Formative Assessment, a professional development programme that aims to improve pupil outcomes by embedding the use of formative assessment strategies across a school. Schools received detailed resource packs to run monthly workshops, and teachers conducted structured peer observations focusing on the use of formative assessment strategies. Students in the 140 secondary schools in the project made the equivalent of two months' additional progress, with attainment measured using Attainment 8 GCSE scores. The additional progress made by children in the lowest

third for prior attainment was greater than that made by children in the highest third.

- In another analysis, the Education Endowment Foundation categorized feedback as having 'high impact for very low cost, based on moderate evidence'. It estimated that an improvement of about three months' additional progress is achievable in schools or nearer four months when the approach is supported with professional development. However, while the average impact on learning is high, feedback interventions also have a very wide range of effects. Indeed, as we noted in the previous section, studies show that in some cases feedback can have negative effects on attainment.
- An interesting variant of formative assessment evaluated its effects on teacher behaviour. A recent US study evaluated the Classroom Strategies Coaching Model, a data-driven coaching approach that uses teacher formative assessment data to drive improvements in their practices. Results from thirty-two elementary school teachers who received brief coaching in a randomized controlled trial are presented. Following coaching, they displayed improvements toward their behavioural management goals. Results also showed meaningful reductions in the overall need for change in instruction and in behaviour management practices.

Feedback

- Hattie's synthesis of feedback referred to twenty-three separate meta-analyses, incorporating a total of 1,287 separate studies. This yielded a high effect size of 0.73, which he described as 'among the most powerful influences on achievement.' Despite its high ranking, Hattie observed that feedback occurs all too rarely, despite teachers' claims that they are constantly engaged in providing it.
- Earlier, Hattie synthesized a large number of studies on the effects of a wide range of influences on learner achievement, and found 139 that focused on feedback. With an effect size of 1.13, this was the most powerful of all the influences on achievement. He concluded: 'The

simplest prescription for improving education must be "dollops of feedback" - providing information how and why the child understands and misunderstands, and what directions the student must take to improve.' Although the meta-analysis was not confined to students with additional educational needs, it is highly likely to apply to such learners.

- Another meta-analysis focused on the effects on learning disabled students' mathematical performance of providing feedback to teachers on their students' performances. This yielded an effect size of 0.23, described as being 'beneficial to students'.
- An early study in the US examined the effects of instructional cues, student participation and corrective feedback on student achievement. A total of twenty studies yielded a very high effect size of 0.94. This result was consistent across elementary and secondary schools and across socio-economic levels and ethnicities. As with Hattie's studies, no data were separately reported for learners with additional educational needs, but it is very likely that such learners would fit within the results.
- According to a UK study, efforts to encourage 'interactive practice' in the National Literacy and Numeracy Strategies have led to an emphasis on teacher questions. This article reports on evidence gathered from a large-scale research project examining classroom interactions during literacy and numeracy lessons. The authors argue that in order to 'open' classroom interaction, emphasis should be less on the questions teachers ask, and more on the manner with which teachers react to pupils' responses to questions. They present evidence of educators' behaviours in reaction to learners' responses that succeed in facilitating a more interactive learning environment.

ADDRESSING RISKS

In formative assessment, we believe that there are four main risks:

- the assessment is not aligned with intended learning outcomes;

- there is too little assessment, which means that some aims are not being evaluated;
- there is too much assessment, at the expense of actually teaching;
- and the assessment is deficit-driven, with too much attention given to looking for problems in the learners, rather than with the teaching strategies.

Feedback, if not handled carefully, can:

- lead to stress and de-motivate;
- not be understood by learners;
- be too little, too late;
- be too dominated by tests; and
- place too much responsibility on the learners for any lack of achievement, rather than sharing responsibility with educators.

Also, you should bear in mind that as well as providing benefits, feedback can sometime carry costs: it takes time, time that might best be spent on other learning activities. Once again, the Goldilocks principle applies: not too much or too little.

CONCLUSION

Taken together, formative assessment and its close relative, feedback, comprises one of the most powerful teaching strategies. At its most basic, it simply means regularly checking and informing learners of their progress. This then leads to learners and/or educators changing their strategies to increase the likelihood of improved performances.