Handbook of Inclusive Education for Educators, Administrators, and Planners

Within Walls, Without Boundaries

Edited by
Madhumita Puri
George Abraham

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Abbreviations

AAC	Augmentative and Alternative Communication
ADHD	Attention Deficit Hyperactive Disorder
ASD	Autism Spectrum Disorders
CBR	Community Based Rehabilitation
CP	Cerebral Palsy
DPEP	District Primary Education Program
ECCE	Early Childhood Care and Education
EQ	Emotional Quotient
GOI	Government of India
ICDS	Integrated Child Development Services
IEC	Indian Education Commission
IEDC	Integrated Education for Disabled Children
IYDP 1981	International Year of Disabled Persons, 1981
MCD	Municipal Corporation of Delhi
MHRD	Ministry of Human Resource and Development
MSJE	Ministry of Social Justice and Empowerment
NCERT	National Council for Educational Research and Training
NPE	National Policy on Education
PIED	Project Integrated Education for the Disabled
PWD Act	Persons with Disability (Equal Opportunities, Protection of Rights and Full Participation) Act 1995
SL	Sign Language
UNESCAP	United Nation Economic and Social Commission for Asia-Pacific

Preface

Great expectations are for everyone. Children with disabilities and their families have dreams, visions, and anticipations. They need to believe in their own strengths, assume control over their future, and anticipate a life with choices and fulfillment. Unfortunately, problems of segregation persist for students with disabilities. Most of them do not have access to the same programs and services provided to other "normal" students. They often leave schools to face unemployment, underemployment, and long waiting lists. Their educational programs are underfunded and lack sufficiently trained personnel. They are being overlooked in today's educational reform movement.

What would change this? A question that formed the subject of many intense discussions. Should it be the curriculum that should be overhauled; or should it be the examination system? Repeatedly, the discussions came back to the point that more than anything else, it was reaching out through a multidimensional approach, i.e., the technique and modality of teaching, which would make a difference.

The other point that emerged was meaningful teacher training—in the absence of which, at least some way of imparting the knowledge and information about modifications in the style of teaching must be explored. Thus, the idea of this handbook came up.

We believe that there are innumerable children who are not disabled in the conventional sense of the term but become seriously affected by the ills of our educational system, leading to an alarming rise in the rate of suicides, adolescent depression, and potential maladjustment. Using the "inclusive model" is a way to reach out to all these children as well, and to create a generation of adults who are well adjusted, confident and well informed to be the leaders of a progressive India.

We have been fortunate to be included in the "mainstream" from our early childhood. Whether it be the family, schooling, social life, profession or recreation, we had the opportunity to be part of the "action." We firmly believe that inclusion is not just another fancy concept; it is a way of life. We have lived it.

This handbook is intended to help policymakers, teachers, educationists, and the school administrators understand the concept of an inclusive school and how persons with different disabilities can be made integral participants in the education process without upsetting the apple cart.

Our country is blessed with a rich heritage of diversity. This diversity spans across culture, religion, language, climate, geography, social structure, ability and so on. We have often wondered, if our children who go through the present education process ever have the opportunity to experience and know the real India. We have always believed that the classrooms of our schools must reflect the diversity, as it exists in our country. Children must grow up recognizing, experiencing, respecting and accommodating diversity. Education is all about growing up knowing the environment in which we live in all its dimensions. Disability is a part of our social setup and our various

processes and programs must include persons with disabilities. A classroom that reflects the diversity of our country will have the potential of nurturing a future generation, capable of carrying forward a united India.

We do believe that this book has the potential to start-off a change in thinking and perceptions about education of persons with disabilities. It also would establish that "inclusion" is no longer an experiment. It is very much do-able and must be pursued.

No work is complete unless the many people, who made it happen, are remembered. Our quest was supported by many. We would like to extend our appreciation to Poonam Natarajan and Rajul Padmanabhan who took great pains to make the fact-sheets on Cerebral Palsy extensive and complete. Our deep appreciation for the involvement of Merry Barua and her colleagues in preparation of the fact-sheets related to Autism Spectrum Disorders. Finally, we would like to thank all the contributors who shared their personal experiences of exclusion and inclusion, lending vibrancy and value to the work.

Our families have been most supportive, never questioning why we were glued to the computer most of the time. Friends and fellow activists in the disability sector were forthcoming in their criticism and suggestions. The contributors were prompt—all of which made this exciting venture, full of its dreams of a vibrant world—even more so.

Madhumita Puri
George Abraham

Introduction: Participation by Inclusion

Madhumita Puri and George Abraham

All mankind is of one author, and is one volume; when one man dies, one chapter is not torn out of the book, but translated into a better language; and every chapter must be so translated .... No man is an island, entire of itself ... any man's death diminishes me, because I am involved in mankind ....

This famous meditation by Donne puts forth an essential idea that people are not isolated from one another, but that mankind is interconnected; and that every person must be rendered into a better language, as society comprises of many chapters; some are translated by age, some by sickness, some by war, and some by justice.

And so on to the Concept of Inclusion, which Means ...

- All children and adults are a part of society.
- The community helps the development of resources where all children are equally valued and have the same opportunities for participation.
- The underlying values of an educational system is ABC (Acceptance, Belonging, and Community) and 4Rs (Reading, Writing, Arithmetic, and Relationships).
- The schools which are a part of this system should be guided by a single unitary body that governs all education.
- It is an ongoing process, not a fixed state.

Thus, an inclusive school values diversity. It treats its students, staff, faculty, and parents as a community of learners. It assumes that with good teaching each child can learn—given appropriate environment, encouragement, and meaningful activities. And last but not the least, inclusive schools base their curriculum and daily learning activities on the existing body of knowledge about pedagogy and learning.

For the purpose of this handbook, the aforementioned is the dictum. It needs to be mentioned here that the canvas of inclusion does not only include persons with disabilities, but that it endeavors to create institutions within a society that treats all people as its part. Thus, inclusion is for everyone. However, the content of this book deals with the issues surrounding individuals with disabilities.

Primary to practicing this dictum of inclusion or of "common schools," is a set of beliefs governing common education that comprises of three elements. These elements build on the fabric of life to create a unified whole, described by us as "The Real School." Who does this? It is our firm belief that it is the privilege and responsibility of the Department of Education, Ministry of Human Resource Development, Government of India, to conceive, plan, strategize and implement this process. These three elements are discussed in the next sections.

The Right to Education

The actualization of the rights of people and the rights of children depends on access to education from the very beginning, i.e., primary education. This can happen only when schools begin to respond to a greater number of children who have never experienced primary education. The right to education can be realized only when schools begin to accommodate different socioeconomic and cultural backgrounds of these children and their broader range of learning styles, behaviors, capabilities, and potential in all sensory domains.

Changes in legislation and professional training help ensure that this objective is fulfilled. These issues are addressed in Unit I of this handbook. It also looks at the evolution of the idea of a universal society with space for all, analyzes the current situation and identifies the need for moving forward.

This leads us to the understanding that education must be delivered with an acceptance of a new norm for the student population. We need to ensure that precious resources allocated to its expansion are not lost through high dropout rates, repetition, and reduced learning. Simply put, it means that unless we move forward, we will be wasting our resources trying to keep our children in school.

The Process of Education

Under the new paradigm for primary education, schools are viewed as an integral part of a child's development. The "school" is not viewed as a separate entity to which children come and go, but rather as a vital partner in the continuum of planning and implementation of instruction and support services for all children.

In such an educational system, the school is seen as belonging not to the government alone but to the community, which it serves with a responsibility for all children. The support of all segments of the community is needed to produce quality educational outcomes, and expectations from the school are high among students, parents, and teachers.

Unit II examines the process and focuses on various sites where children with disabilities have been included and then zooms onto the critical lessons learnt regarding its potential. These lessons are the micro models that have macro applications.

In a system that adopts these approaches, its educational services bring into its fold a range of related domains that impact educational achievement including health, physical and nutritional status, emotional support and supervision, family relations, work demands, and employment opportunities. Inclusion is the unifier that makes this happen. It unites the "fragmented" child and provides an opportunity to look at the child in totality.

Recognizing Diversity

So what is inclusion or inclusive education? First, it is an attitude—a value and belief system—not a set of actions. Once adopted by a school, it should drive all decisions. The word *include* implies being a part of something, being embraced into the whole. *Exclude*, its antonym, means to keep out, to bar, or to expel.

Segregated, specialized education creates a permanent underclass of students, with a strong message to these students that they do not "fit" or belong. In fact, the many suicides and school dropouts that seem to be on the increase nowadays are merely the casualties of an inflexible, insensitive system of education that systematically (perhaps unintentionally) destroys the self-esteem and self-worth of students who do not "fit the mold."

The growing diversity of our student population is a topic of great debate and concern. Differences may include language, culture, religion, gender, disability, socioeconomic status, geographic setting, and much more. Diversity is often spoken about as if it were a plight rather than a wonderful opportunity to learn—that is, learn about the rich variety of each others' lives and also about what it is to be human—to be included, to be valued and respected for just who we are in a natural world.

Unit III draws upon the critical lessons in Unit II and looks forward towards the path of change.

So, Are You Thinking Inclusion?

Let us begin by understanding that programs developed on the principles of inclusion show the following characteristics:

- The system accepts and promotes the fact that the majority of children with special educational needs can be accommodated within the regular school system.
- There is explicit recognition that the education of all children with special educational needs is a responsibility of the national school system.
- Leadership and resources are provided to make primary teaching and curricula more flexible, allowing both for common experiences and specialized goals, in order to respond to a variety of individual needs and environmental circumstances—as local cultures and communities dictate.
- Closer links between regular and special education, formal and non-formal systems, and school and community sectors are encouraged so as to benefit all children.
- There is recognition that teacher training is a highly interactive, continuous, and supportive process of enhancing the competence of the teacher to respond to a greater diversity of children's learning styles and needs.
- Community and parental involvement, including distribution of control and responsibility is encouraged.

Several benchmarks for the greater inclusion of children with special educational needs in basic and primary education have already been set by many states in India. Over the past few decades,

we have begun to recognize the need for stronger policies to protect the rights of children to a quality education. There is a great deal of evidence that in the last decade, a partial shift in the institutional and cultural content of attitudes towards children with special educational needs has occurred.

The book is intended to be both a guide and a reference manual to help the process along; a process that is governed by the will of administrators, planners, and educators, who are committed to establishing an inclusive educational system.

Unit I

Inclusive Education—An Overview

1

HISTORICAL PERSPECTIVES

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More than half-a-century ago in 1948, the Universal Declaration of Human Rights was adopted by the United Nations General Assembly. In 1975, the same body adopted the Declaration on the Rights of Disabled Persons. Many important Conventions, Declarations and Action Plans have been either ratified, acceded to, or accepted by governments and international and national non-governmental organizations. Those which relate directly to "Education for All," particularly disabled children, are detailed here.

The Convention on the Rights of the Child, 1989, especially Articles 23, 28, and 29; along with Articles 2, 3, 6, and 12, has been ratified by all countries in the Asia-Pacific region. It is binding on them "to promote and protect the right of children with disabilities." This report and an United Nations Economic and Social Commission for Asia-Pacific (UNESCAP) Report in 1999 on "Education for Children and Youth with Disabilities into the 21st Century" point out that while some significant progress has been made, there is a paucity of specific disability-related data. The little that is available is also either unreliable or confusing, suggesting that much more remains to be done for a majority of disabled children.

The World Declaration on Education for All and its **Framework for Action to meet Basic Learning Needs, 1990,** Article 3, Clause 5, states: "the learning needs of the disabled demand special attention. Steps need to be taken to provide equal access to education to every category of disabled persons as an integral part of the education system." Nothing could be more clearly stated. The Declaration and Framework were accepted with the year 2000 as the target for completion. But today, after the deadline is over, the scenario remains disheartening.

There are several other such meetings and conventions. Some of the most significant ones are listed here, India being a participant in all of these conventions.

1. **The World Declaration on the Survival, Protection, and Development of Children** and the Plan of Action, which was the outcome of the UNICEF World Summit for Children, 1990.

It identified 10 key action areas, however, relatively little has been accomplished in the developing countries for children with disabilities.

2. **The Asian and Pacific Decade of Disabled Persons,** 1993–2002, with its Proclamation on the Full Participation and Equality of People with Disabilities in the region, was signed by 41 governments out of the 51 member states and 9 associate members.
3. **The Agenda for Action for the Asian and Pacific Decade of Disabled Persons,** 1993–2002 has a comprehensive coverage of 12 major areas of concern and 107 revised targets.
4. **The World Conference on Special Needs Education** and the **Salamanca Statement** and **Framework for Action on Special Needs Education,** 1994 brought together government representatives, world experts in special needs education, and international NGOs, to focus on the value of inclusive schools for a majority of children with disabilities, and to spell out guidelines for the implementation of such an approach. Once again, neither inclusive schools nor integrated education programs have been introduced or expanded as much as they could have been in the years that followed.

In April 2000, a disturbing fact was brought to light. Ten years after the "Education for All" declaration and the stated commitments by the world community to achieve the goal by 2000, "more than 113 million children have no access to primary education, 880 million adults are illiterate, gender discrimination continues to permeate education systems ...." The report, however, made no direct mention of the special needs of disabled children. The Dakar Framework for Action of the World Education Forum spells out a new resolve to achieve real "Education for All" by 2015, which is now the new target year. To achieve this ambitious goal for children with disabilities, "... all states will be requested to develop or strengthen existing national plans of action. These plans ... should be developed through more transparent and democratic processes, involving stakeholders, especially people's representatives, community leaders, parents, learners, non-governmental organizations (NGOs) and civil society."

Among the 113 million children who are deprived of their basic human right to education, disabled children probably comprise the highest proportion. UNICEF–EAPRO estimates that "only 1 in every 50 children with disability has access to education."

It is obvious that having missed the last target, we should get started right away to ensure that we do not miss the next one too! A number of international and national initiatives have contributed significantly to the movement toward inclusive education in India. Some of the important ones are mentioned in the later sections.

International Initiatives

1. **International Year of Disabled Persons (IYDP, 1981):** The United Nations declared 1981 as the International Year of Disabled Persons. "Full Participation with Equality" was the underlying theme of this program. India's response to the UN Declaration was the development

of a National Plan of Action (NPA) to provide comprehensive services for persons with disabilities.

2. **Asian and Pacific Decade of Disabled Persons (1992):** The Economic and Social Commission for Asia and the Pacific (ESCAP), at its 48th session held in Beijing, declared 1993–2002 as the Asian and Pacific Decade for Disabled Persons. The Commission, while evaluating the situation of people with disabilities in member countries, stated: "the opportunities for full participation and equality of people with disabilities, especially in the fields of rehabilitation, education and employment, continue to be far less than those for their nondisabled peers." The Commission attributed this lack of opportunities for people with disabilities largely to the "negative social attitudes" towards such persons in these countries. It also stressed upon the need to change such attitudes and anticipated that only with improved attitudes and increased awareness, would it be possible to build social and physical environments that are accessible to all.
3. **United Nations' World Conference on Special Education (1994):** Representatives of more than 92 countries, including India, participated in a World Conference on Special Education in Salamanca, Spain in 1994. All participants adopted **The Salamanca Statement,** which proposed that children with special educational needs must have access to regular schools.

National Initiatives

1. **The Indian Education Commission (1964–66):** The Indian Education Commission was the first statutory body to suggest that the education of handicapped children has to be organized not merely on humanitarian grounds, but also on grounds of utility. The Commission observed that although the Indian Constitution had issued specific directives about compulsory education for all, including children with disabilities, very little had been done in this regard. The Commission also emphasized that the education of children with disabilities should be "an inseparable part of the general education system." At the time when the Commission made its recommendations there were less than 250 special schools in India. The Commission felt that services for children with disabilities were extremely inadequate and recommended the adoption of a dual approach, namely, the provision of special as well as integrated education to improve the situation. The Commission set the following targets to be achieved by 1986: education for about 15 percent of the blind, the deaf and orthopedically handicapped and 5 percent of the mentally retarded. The Commission also specifically emphasized the importance of integrated education in meeting this target as it is cost-effective and useful in developing mutual understanding between children with and without disabilities.
2. **Integrated Education for Disabled Children (IEDC, 1974):** In 1974, the Ministry of Social Justice and Empowerment, Government of India, initiated the IEDC program to promote the integration of students with mild to moderate disabilities into regular schools. Children were to be provided financial support for books, stationery, school uniforms, transport, special

equipment, and aides. The state governments were provided 50 percent financial assistance to implement this program in regular schools. However, the program met with little success.

A criticism of this program in the state of Maharashtra reported that the (*a*) non-availability of trained and experienced teachers; (*b*) lack of orientation among school staff on the problems of disabled children and their educational needs; and (*c*) non-availability of equipment and educational materials, were the major contributory factors for its failure. A lack of coordination among various departments to implement the scheme was also considered a major contributor for its failure. By 1979–80, only 1,881 children from 81 schools all over the country had benefited from this program. Due to the failure of the IEDC scheme, it was revised in 1992. Until 1990, the scheme was implemented in 14 states. These were Andaman and Nicobar, Bihar, Gujarat, Haryana, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Nagaland, Orissa, Rajasthan, Tamil Nadu and Uttar Pradesh. Kerala is the only state that has shown remarkable progress in implementing this scheme. In Kerala, the scheme has been implemented in 4,487 schools and 12,961 children have been served under this scheme.

3. **National Policy on Education (NPE, 1986–92):** In 1968, the Indian Government formulated the National Policy on Education for all government schools and articulated a need to integrate students with disabilities. Again in 1986, the National Policy on Education devoted a specific section to the education of students with disabilities. It emphasized that whenever feasible, the education of children with motor handicaps and other mild disabilities should be provided in regular schools. The National Policy also stressed that those children whose needs could not be met in regular schools were to be enrolled in special schools. Children who were already in special schools could be integrated into regular schools as soon as they acquired reasonable levels of daily living, communication and basic academic skills. It also emphasized the need to restructure primary teacher training programs to prepare teachers to deal with the special difficulties of children with disabilities.
4. **Project Integrated Education for the Disabled (PIED, 1987):** In 1987, the Ministry of Human Resource Development (MHRD) in association with UNICEF and the National Council for Educational Research and Training (NCERT) undertook "Project Integrated Education for the Disabled" (PIED). The aim of the project was to strengthen the implementation of the IEDC scheme.
5. **District Primary Education Program (DPEP, 1994):** A centrally sponsored scheme, the District Primary Education Program aims to reduce the overall dropout rates of all students enrolled in primary classes, to raise their achievement levels and to provide primary education for all children, including children with disabilities. This is probably the largest program of the central government in terms of funding.
6. **The Persons with Disabilities Act (PWD Act, 1995):** A close examination of the national initiatives discussed so far indicates that although the Indian Government had made several attempts to implement integrated education programs, it lacked a firm commitment to promote integration. This was largely because the Indian Government had considered provision for children with disabilities to be a welfare issue rather than an educational imperative. The

PWD Act proposed the provision of improved educational services, medical care, vocational training, employment, and social security for all persons with disabilities. The Act further stated that whenever possible, students with disabilities should be educated in regular school settings.

The latest Education Bill on the anvil is a retrograde step in this direction. It fails to consider the need for a quality common school system. Efforts are on to arrest this march before it damages the little that has been achieved.

2

WHY INCLUSION?

Madhumita Puri and George Abraham

The birth of a child is always a cause for great happiness and jubilation for the parents, immediate family, and friends. The child becomes the central attraction. She receives all the attention, love and tenderness, and is nurtured with care to become an important member of the family.

As the child grows older, he or she also starts playing a role and takes on responsibility, and in the process begins contributing to the day-to-day routine of the family. When the child becomes 4 or 5, she is sent to school. She starts learning, interacting with peers, playing games, getting into extra-curricular activities etc.

Soon the child completes school and then moves into college, professional education programs and then passes into the next phase of being gainfully employed at say 21 or 22. She then begins contributing to the income of the family. All along, she is being groomed, nurtured and given opportunities to evolve into her full potential.

Now let us think about the birth of a child with a disability. The child is greeted with disappointment, frustration, and anger. The initial years are spent in either medical shopping or in neglect or in overprotection. In all circumstances, the child is excluded from the opportunity of love, nurture, and of simply being a child. The child is provided for but not encouraged to grow by doing little things around the house. Even the normal milestones of growing up often get delayed or missed out.

When the child reaches the age of 4 or 5, and it is time to go to school, he or she is denied access to a normal school and, if lucky, is either sent to a special school where other disabled children go or is kept at home and looked after. At 15, the child is put through a vocational training program that is more often than not irrelevant or obsolete in terms of employment.

At around 21 and 22 the disabled youngster is forced into the open world and expected to perform. At this stage, when the disabled person struggles, the world calls her handicapped. After being excluded from mainstream opportunities of a normal childhood, normal schooling, and other growth

opportunities, it is rather unfair to expect the disabled person to suddenly find a firm footing in the normal world.

It is this exclusion, which begins almost from birth, that transforms the disability into a handicap, a social burden. The family, immediate relatives and the community force this exclusion upon the disabled person right from birth. It is this exclusion that denies the disabled person the opportunity to learn and imbibe the dynamics of family and community life.

Inclusion needs to begin right from birth. Right from the moment a child is born, the process of learning, development, and evolution begins—this process should be shielded from neglect. Seclusion or exclusion is not natural; it tends to inhibit growth and often retards. Inclusion is possible when the community develops its own resources to make it happen.

Challenges to the Individual

The advantage of inclusion is that it introduces the disabled child to the mainstream of life right from day one. The child is literally thrown into the shallow end of the stream where he or she learns the art of living at a friendly pace, recognizing and appreciating expectations, responsibilities, challenges, and the opportunities of life. The environment is friendly but competitive, the bar is constantly being raised and each person or child is continuously challenged to perform at higher levels. Teaching, training, and grooming in the school are directed at enhancing skills, abilities, and techniques to actualize this challenge.

Ideally, limitations and special needs are recognized and catered for, with a focus on ability—the *Can*. Qualities like positive attitude, ambition, and confidence are nurtured. The inclusive set-up helps fine-tune and hone the personality of the disabled child to be ready to swim the deep and dark waters of a tough and demanding world.

Challenges to the Administration

Inclusive education also challenges the prevailing systems in terms of physical structures, human resources, curriculum, teaching, and communication media and methodologies, teaching and learning material, attitudes etc. Inclusion provides an opportunity for planners, designers, policymakers, administrators, and implementers to work on and develop the concept of a universal design. This could well be the nursery of a civil society that provides for all its members without exception.

Education must, ideally, provide the child not only learning and vocational skills, but also endeavor to nurture an intellect and a psychology that reflects and demonstrates confidence, a positive attitude and a passion for life. A combination of skills and a belief in one's own self, would be the tonic to inspire disabled youth.

An Example

An observational and qualitative research carried over a 10-year period exposed certain glaring gaps in the prevailing programs and education/rehabilitation philosophy. These observations were made during interactions and workshops conducted with young adults with visual impairment in preparations for the World Cup Cricket for the Blind. The blind are often isolated from the society right from early childhood, since they are admitted to blind schools and spend their formative years within confines of the four walls of the blind schools and training centers. They get very limited experience of the real world. Hence when they enter the real world, more often than not they are ill-equipped to cope with day-to-day situations. They are full of diffidence and have a very poor sense of self-worth. Why is this so?

1. Often in blind schools, it is the management that determines, in their own wisdom, what the blind can and cannot do. If the management feels that candles are what the blind can make, then it is candle making that the blind are taught. This is a common management attitude or thinking that prevails right across the nation. There is no effort made to understand the aptitude, desire or potential of each individual blind person. In the case of normal children, however, the parents play an important role in determining the vocation of their child, and even then the final choice is usually that of the person concerned.
2. When the only company the blind have is other people with blindness, it tends to impose a situation wherein the blind person is forced to think of the limitations imposed on them by their impairment rather than explore the possibilities of their ability, with reference to what others are trying to do. As a consequence, a "frog in the well" thinking sets in. The blind themselves start limiting their own potential. Recounting as an illustration, the instance of a young girl in Mumbai who said that she was destined to become a telephone operator. Further interactions revealed a wonderful command over both English and Hindi along with a very pleasing personality. She could definitely explore tele-marketing, radio broadcasting, voicing for advertisements as options. But she had not, for she had never been exposed to the options—a clear example of not recognizing potential.
3. It was also seen that most youngsters had very poor general knowledge. They were not only ill-informed, but also lacked the inclination to know. During the workshops, participants were asked to prepare a two-minute talk on any topic of their interest. Some of them spoke about problems faced by the blind or rights of the blind or some very elementary school boyish topic such as "honesty is the best policy." Similar exercises done with normal students threw up more contemporary topics. This is probably due to a limited exposure to the world—alarming indeed in a world where "information is power."
4. Poor level of knowledge was also combined with low levels of skills in logic, analysis, and communication. The ability to understand and analyze or deduce through logic was seen to be minimal. It was also noticed that there was a fear or a reluctance to communicate or participate in a discussion.

5. In most of the workshops it was observed that there was a great need for social and personal grooming. There was need for intervention in areas of posture, facial expression, dress sense, conversational skills, personal hygiene, and interaction with the opposite sex etc.
6. Another interesting observation made was that the average blind student or youngster expected the world to help, to the extent that he or she believed that help must come to them as a matter of right. This thinking led to bitterness towards the sighted world. The blind youth seemed to think more of what the world should do for them rather than what she/he should do for themselves.

And if a moment or two is spent in reflection as to why it is so, the answer that comes to the mind is lack of exposure, isolation, and lack of direction. Removing this barrier is possible with the development of child-oriented programs that support active learning with (*a*) opportunities to practice developmental tasks; (*b*) teachers who understand developmental needs and characteristics of the children; (*c*) a curriculum that furthers cognitive development via concrete experiences; and (*d*) physical settings designed to encourage independence and motivate involvement.

What is Inclusion

Inclusive education is sometimes seen as a political strategy based on human rights and democratic principles, that confronts all forms of discrimination, as part of a concern to develop an inclusive society and to ensure that some students receive additional resources and are not ignored or neglected.

The important point is that inclusive education allows children with disabilities to stay with their family and to go to the nearest school, just like all other children.

> "Inclusive education is concerned with removing all barriers to learning, and with the participation of all learners vulnerable to exclusion and marginalization. It is a strategic approach designed to facilitate learning success for all children. It addresses the common goals of decreasing and overcoming all exclusion from the human right to education, at least at the elementary level, and enhancing access, participation and learning success in quality basic education for all."
>
> **Source**: *Education for All 2000 Bulletin*, UNESCO, No. 32, 1998.

The main elements of inclusive education are:

- A human rights issue ("Education for All" means ALL children, not almost all).
- Education for All in a School for All (disabled and non-disabled children learning together in regular schools: learning to know, learning to do, learning to be and learning to live together).
- Togetherness (enabling all to participate together in society from the beginning; contributing to social harmony and stimulating the building of relationships among individuals, groups and nations).
- Breaking barriers (familiarity and tolerance reduce fear, prejudices and rejection).

The Problem

So far we have mainly been relying on a special, parallel school system for children with disabilities, which we have called special education. It remains a separate system that has reached very few of those who should need special attention, in fact, not more than around 1–2 percent in most developing countries. It is still not uncommon to hear representatives of the general school system declare: "These are not our children; they belong to special education."

Building up a parallel school system for these children has rendered it unnecessary for teachers in regular classes or schools to give any consideration to them. Many of them are left to repeat and then "drop out" or in fact be "pushed-out," if they were not "left-out" already from the beginning.

However, realization has dawned that new and different strategies to reach the unreached must be developed. There is also renewed acceptance that before embarking on highly specialized and separate services it is important to first arrange for their participation in already existing or planned programs available to all other citizens—including education. It is important to remember that experiencing difficulties in learning is a normal part of schooling rather than an indication that there is something wrong with the child. In many instances there are reasons to believe that it is the school system and not the child that is handicapped.

Emphasizing inclusive education does not, however, rule out special schools or centers. They would still be required to cater to some children with profound and complex difficulties in need of more specialized and extensive help. They would be, however, very few in number. As many as 80 to 90 percent children with special educational needs could get their education in regular schools and classrooms, if certain important preconditions are met.

Inclusive education does not simply mean to move children from existing special education services to an ordinary classroom. As is obvious, there will be no proper inclusive education if existing school systems are not being reformed to make them at the very least—disabled friendly. The need of the hour is to find what is best for the child in every given situation. If the main reason for excluding the children in the first place was that the regular schools were failing to meet their needs, it makes no sense to bring them back unless changes have been made.

The Challenges

School Reform

As was expressed at the Salamanca conference: "... the full inclusion of all children in ordinary schools can come about only as a result of a reform of the school and the education system as a whole. It is the whole education system, and not just one aspect of it which should be reformed to

make inclusive education possible." (Marchesi, A., "Special Needs Education: Conceptual Framework, Planning and Policy Factors", Paper presented at the World Conference on Special Needs Education, Salamanca, Spain, 1994.) This means, for example, changes in curricula and teacher training; developing support services to schools and classroom teachers; seeing parents as partners and so on. It will therefore be necessary to allow for flexibility in the methods and materials used to give these children the widest possible access to the regular curriculum. There is an urgent need to seriously incorporate this into educational practices, to help bring about a greater acceptance of diversity for children who learn together—learn to live together—when they are young and later as adults.

We can make inclusion happen by:

1. Removing physical barriers posed by stairs, doorways, toilets, water faucets, and other architectural aspects imperative to accessing facilities in the school.
2. Removing the barriers of the teaching system, by providing facilities for accessing information related to the curriculum, by the use of modern technology like computers using specialized software. By providing awareness, sensitivity and solutions for teachers.
3. Removing the barriers of the examination system by providing means of free and fair evaluation of the students knowledge irrespective of his/her sensory/physical status.
4. Removing the barriers of attitude developed due to lack of awareness.

3

CURRENT PROVISIONS OF LAW AND POLICY

Shruti Pandey

Does the law provide for inclusive education to the disabled in India? In the absence of any dedicated legislation in the area of education for the disabled, like the Individuals with Disabilities Education Act (IDEA) in the USA, one has to look for an answer by scanning the law relating to the disabled in the country, and identify the provisions they contain on education, if any. The next step would be to understand the philosophy of those provisions; is it segregationist or integrationist education that they contemplate.

There are four special legislations relating to the disabled persons and their rights in India which have been enacted by the Union Government so far:

1. The Mental Health Act, 1987
2. Rehabilitation Council of India Act, 1992
3. The Persons With Disabilities (Equal Opportunities, Protection of Rights and Full Participation) Act, 1995: lets call it in short, the Persons With Disabilities Act or PWD Act
4. The National Trust for Welfare of Persons With Autism, Cerebral Palsy, Mental Retardation and Multiple Disabilities Act, 1999

All these laws derive their mandate from Article 14 of the Constitution of India which states: "The state shall not deny to any person equality before the law or the equal protection of the laws within the territory of India," which means that every person living in this country has the fundamental right to be treated equally and to equal protection of law within the territory of India. For the present purposes, this translates into the promise on the part of the government that disabled persons are entitled to the same rights under the constitution as others and no discrimination is permissible on the ground of their disability.

First, a plain reading of the provisions of these acts. Amongst the four acts mentioned above, it is the PWD Act, which contains the substantial provisions on the education of disabled. Unfortunately, a plain reading of this act on issues related to education, leads to nowhere!

Sections 26 to 31 of the PWD Act, pertaining to education for the "persons with disabilities" are as follows:

26. The appropriate governments and the local authorities shall

(*a*) ensure that every child with a disability has access to free education in an appropriate environment till he attains the age of 18 years;
(*b*) endeavor to promote the integration of students with disabilities in the normal schools;
(*c*) promote setting up of special schools in government and private sector for those in need of special education, in such a manner that children with disabilities living in any part of the country have access to such schools;
(*d*) endeavor to equip the special schools for children with disabilities with vocational training facilities.

27. The appropriate governments and the local authorities shall by notification make schemes for

(*a*) conducting part-time classes in respect of children with disabilities who having completed education upto class fifth and could not continue their studies on a whole-time basis;
(*b*) conducting special part-time classes for providing functional literacy for children in the age group of 16 and above;
(*c*) imparting non-formal education by utilizing the available manpower in rural areas after giving them appropriate orientation;
(*d*) imparting education through open schools or open universities;
(*e*) conducting class and discussions through interactive electronic or other media;
(*f*) providing every child with disability free of cost special books and equipments needed for his education.

28. The appropriate governments shall initiate or cause to be initiated research by official and non-governmental agencies for the purpose of designing and developing new assistive devices, teaching aids, special teaching materials or such other items as are necessary to give a child with disability equal opportunities in education.

29. The appropriate governments shall set up adequate number of teachers' training institutions and assist the national institutes and other voluntary organizations to develop teachers' training programs specializing in disabilities so that requisite trained manpower is available for special schools and integrated schools for children with disabilities.

30. Without prejudice to the foregoing provisions, the appropriate governments shall by notification prepare a comprehensive education scheme which shall make provision for

(*a*) transport facilities to the children with disabilities or in the alternative financial incentives to parents or guardians to enable their children with disabilities to attend schools;

(Contd. on next page)

(*b*) the removal of architectural barriers from schools, colleges or other institutions imparting vocational and professional training;
(*c*) the supply of books, uniforms and other materials to children with disabilities attending school;
(*d*) the grant of scholarship to students with disabilities;
(*e*) setting up of appropriate mechanisms for the redressal of grievances of parents regarding the placement of their children with disabilities;
(*f*) suitable modification in the examination system to eliminate purely mathematical questions for the benefit of blind students and students with low vision;
(*g*) restructuring of curriculum for the benefit of children with disabilities;
(*h*) restructuring the curriculum for benefit of students with hearing impairment to facilitate them to take only one language as part of their curriculum.

31. All educational institutions shall provide or cause to be provided amanuensis to blind students and students with or low vision.

Before going into an analysis of these provisions, it needs to be clarified at the outset that the act does not cover all the categories of disabled persons: it specifically covers only the persons who suffer from any of the following seven disabilities and to the extent of not less than 40 percent.

(*a*) Blindness (which is defined as a condition where a person suffers from any of the following conditions: total absence of sight; or visual acuity not exceeding 6/60 or 20/200 [Snellen] in the better eye with correcting lenses; or limitation of the field of vision subtending an angle of 20 degrees or worse).
(*b*) Low vision (which is defined as a condition of impairment of visual functioning of a person even after treatment but who uses or is capable of using vision for the planning or execution of a task with appropriate assistive device).
(*c*) Leprosy-cured person (which is defined as a condition when a person has been cured of leprosy but is suffering from: loss of sensation in hands or feet as well as loss of sensation and paresis in the eye and eye-lid but with no manifest deformity; or manifest deformity and paresis but having sufficient mobility in the hands and feet to enable him to engage in normal economic activity; or extreme physical deformity as well as advanced age which prevent him from undertaking any gainful occupation).
(*d*) Hearing impairment (which is defined as a condition of loss of 60 decibels or more in the better ear in the conventional range of frequencies).
(*e*) Locomotive disability (which is defined as a condition of disability of the bones, joints or muscles leading to substantial restriction of the movement of the limbs or any other form of cerebral palsy).
(*f*) Mental retardation (which is defined as a condition of arrested or incomplete development of mind of a person, which is specially characterized by sub-normality of intelligence).
(*g*) Mental illness (which is defined as any mental disorder other than mental retardation).

Inasmuch as "special education" and "special schools" have been predominantly mentioned at several places and also since their role has not been defined anywhere, one gets a broad impression that the leaning of the act is towards segregationist education. However, the use of the term "integration" in Section 26(b) and "integrated schools" in Section 29, shows that the integrationist school of thought also has a presence here.

As far as inclusive education is concerned, Section 26(a) which envisages "appropriate" environment gives a hint of an endeavor towards inclusive education in the act but after going through the entire clause, one almost wonders if this is wishful thinking, or a linguistic illusion arising purely out of the use of a particular terminology associated with inclusive education elsewhere! The provisions which do lend more credible basis for the view that inclusive education has been acknowledged in the act, are provisions like Section 28, which provide for *designing and developing new assistive devices, teaching aids, special teaching materials or such other items* as are necessary to give a child with disability *"equal opportunities in education*." Or Clauses (f), (g), (h) of Section 29 which provide for *suitable modification in the examination system* to eliminate purely mathematical questions for the benefit of blind students and students with low vision (f); *restructuring of curriculum* for the benefit of children with disabilities (g); restructuring the curriculum for benefit of students with hearing impairment to facilitate them to take only one language as part of their curriculum (h). Also, Section 31 stipulates that all educational institutions shall *provide amanuensis* (scribes) to blind students and students with low vision.

It is clear that the PWD Act has only laid down the law to the extent of recognizing the right of the disabled to be educated. Beyond this, it gives an impression of little understanding in the minds of those who framed this law, of the three schools of thought, which must be responsible for creating a medley of all three of them. This is the best possible view if one were really looking hard for avenues for inclusive education. Otherwise, if one looks at the act without any prejudgment, it is clear that the segregationist school is what finds favor with the lawmakers, for the plain reason that it gets mentioned the most.

Having said this, and for the sake of taking this issue further, if one accepts that some of the provisions pointed out above do indicate any intent on part of the government to bring in inclusive education, much improvement and finesse, both in the language and the concept, is called for.

First, as already pointed out, the phrase "appropriate environment," which has been mentioned is highly inadequate and ambiguous by itself, since as such, it fails to lay down any standard whatsoever, of the appropriateness of the environment. In fact, in the absence of any qualifying words, there is a certain danger that segregation could be pushed as appropriate. Further, the provisions like Clauses (f), (g), (h) of Section 29 which provide for *suitable modification in the examination system* to eliminate purely mathematical questions for the benefit of blind students and students with low vision (f); *restructuring of curriculum* for the benefit of children with disabilities (g); restructuring the curriculum for benefit of students with hearing impairment to facilitate them to take only one language as part of their curriculum (h); are also inadequate for the same reasons as above, since, in some ways, they fail to clearly define the purpose for which these modifications and restructuring are called for. They in any case also fail to make a definite statement in favor of inclusive education.

If the intent is to take up these exercises towards inclusive education, then the changes ought to have reflected the really effective factors of inclusive education like, access in the general curriculum, the medium and mode of teaching, the learning tools and material, access to the teaching, the methods of assessment and most importantly, compulsory training of all teachers (not the special educators but those who teach in mainstream institutions) to develop skills and knowledge necessary to equip them to teach the disabled children also. In fact, some of these provisions plainly betray the lack of proper understanding of the issues involved and even faulty assumptions, like, Clause (f) which assumes an inability on part of the blind or low vision students to learn mathematics, which is totally unwarranted since their only limitation is of access and tools!

Section 28 of the PWD Act does provide for *designing and developing new assistive devices, teaching aids, special teaching materials or such other items as* are necessary to give a child with disability "equal opportunities in education." It however, seems to *prima facie* lean towards inclusive education. But if that is indeed so, it could be better worded. In its present form, it doesn't go beyond just equal opportunities in curriculum and academics. It should include in its sweep a totally interactive learning process, which means the coming together of all students, disabled and nondisabled, in all respects!

Though Section 31, which stipulates that all educational institutions *shall provide amanuensis* (scribes) to blind students and students with low vision, also seemingly leans in favor of inclusive education, seems to be incomplete too. It does not specify the qualifications for the scribes, so as to be able to provide quality service to the student on whose behalf they write. At present, some rules are said to be in operation which have laid down that the scribe must have a qualification of a level lower than the student and that he ought to have secured less than 50 percent! There could definitely be a better model for the system of providing scribes, for example, the scribe could be from a different stream of learning from that of the student and then his qualification need not be lower. Also, definitely, there must be some criteria to judge that the scribe has some optimum level of language skills to write correctly and accurately what the student dictates. Under the present system, the poor quality of scribes practically works out to be against the interest of the student and defeats the very purpose of their engagement!

By clever interpretative tactic, another hope for bringing in inclusive education through the present law, could be found in the definition of "rehabilitation" in the PWD Act, which has been given as "a process aimed at enabling persons with disabilities to reach and maintain their optimal physical, sensory, intellectual, psychiatric or social functional levels." This very broad and all encompassing definition of rehabilitation also has immense potential to be used for bringing in inclusive education, especially in view of certain duties cast in the act towards rehabilitation of the disabled. Section 66(1) of the act imposes a duty on the government to undertake rehabilitation of all persons with disabilities and Section 48 obliges the government to promote and sponsor research, *inter alia*, in the area of rehabilitation including community based rehabilitation, and Section 49 obliges the government to provide financial assistance to universities, other institutions of higher learning, professional bodies and non-governmental research units or institutions, for undertaking research for special education, rehabilitation, and manpower development.

While one is analyzing the provisions of the PWD Act, it would also be instructive to take a look at its preamble. It says that the act has been brought in to give effect to and implement the

Proclamation on the Full Participation and Equality of the People with Disabilities in the Asian and Pacific Region adopted at the meeting to launch the Asian and Pacific Decade of Disabled Persons (1993–2002). This meeting was convened by ESCAP, and held at Beijing during December 1–5, 1992, to which India is a signatory. This is of some importance since it is an established principle of law that the preamble discloses the primary intention of the statute and is a key to interpretation of its provisions. Especially where the object or meaning of the provisions of the act is not clear or the provisions are ambiguous, the preamble can be taken as an aid for the purpose of finding their meaning and scope. The preamble of the PWD Act could certainly be utilized to iron out the ambiguities in the provisions mentioned above in favor of inclusive education.

All the above interpretations are however conjectural and it is clear that on the face of it the PWD Act in its present form carries very little to gain for a person who needs/wants inclusive education today. Now, does that mean that there is very little hope for fighting for the right to inclusive education for the disabled children and their parents? The answer to this is an encouraging "NO"! That is because, notwithstanding these specific legislations, there is an overarching constitutional framework, led by Article 14 mentioned at the beginning of this chapter, the principles of which are always available for anyone to use, for demanding a fundamental right to equality of all persons living in this country. This in turn carries in its fold the right of the disabled children to be educated in the mainstream educational institutions like the nondisabled children.

One must also mention here that Section 39 of the PWD Act which says: "All Government educational institutions and other educational institutions receiving aid from the Government, shall reserve not less than 3 percent seats for persons with disabilities," though it is included in the chapter specifically titled as "employment," has been rather interestingly and successfully used by several disabled students and/or their parents to demand reservation of seats in higher professional educational institutions like the IITs, IIMs, medical colleges, etc. (refer to *Dr S.K. Singh v Indian Institute of Technology*: CWP 3460 filed before the High Court of Delhi; *Dr Ashish v State of Maharashtra & Others*: CWP 1093 of 2000 filed before the High Court of Bombay, Nagpur Bench, etc.). The verdicts in these cases mean that in effect, the courts have recognized and granted the right of inclusive education to the disabled students in these professional educational institutions. Even though the author is not aware of any litigation of this kind relating to elementary, primary and secondary education institutions, nothing prevents using these judgments as precedents to urge for right to inclusive education in these institutions too!

It would be also in place to make a mention here of a recent public interest litigation initiated in the Hon'ble High Court of Delhi by a group of lawyers concerned with disability rights, being Writ Petition No. 1342 of 2003 titled as *Social Jurist v Union of India & Others*. In this subjudice petition it has been highlighted that though the PWD Act came into force w.e.f. February 7, 1996, till date the central government as well as the Government of Delhi have failed to prepare any comprehensive education scheme as required under Section 30 of the act and also that the central government and the Government of Delhi have failed to revise and to bring the centrally sponsored Integrated Education for Disabled Children (IEDC) scheme of 1976–77 in conformity with the provisions of Section 30 of PWD Act, 1995. It has further highlighted that children with disabilities studying in government and Municipal Corporation of Delhi (MCD) run schools in Delhi are denied even the benefits presently provided in the IEDC. It has been submitted that the aforesaid failures on the

part of the respondents are violative of human and fundamental rights of lakhs of children with disabilities as guaranteed to them under the Constitution of India read with the provisions of PWD Act and Delhi School Education Act, 1973.

Though the petition has not specifically made inclusive education an issue, it could become one as the case proceeds inasmuch as it has been submitted in the petition that children with disabilities are prevented from receiving education because of several problems, e.g., lack of transport facilities, architectural barriers in the school, lack of books, school uniform and other material, nonavailability of scholarship, and lack of setting up of appropriate fora for the redressal of grievances of parents regarding the placement of their children. Also, lack of suitable modification in the examination system to eliminate purely mathematical questions for the benefit of the blind students and students with low vision, lack of restructuring of curriculum for benefit of children with disabilities and lack of restructuring the curriculum for benefit of students with hearing impairment to facilitate them to take only one language as part of their curriculum etc., need to find mention in the petition. It has been submitted that lack of aforesaid and other facilities not only prevents the children with disabilities from coming to schools but also creates a situation where the school-going disabled children stop attending schools. The petitioner has therefore urged that adequate provisions are made to create the aforesaid and other such facilities which the children with disabilities need in order to enable them to attend the school. It is clear that the petitioner has relied on the provisions of the PWD Act as they exist on paper as of today. Whatever limitations they suffer from, one could still hope for some directions which might lead to inclusive education in some ways.

It is also very crucial to point out at this juncture some glaring anomalies at the level of policy: while education for the nondisabled comes under the Ministry of Human Resource Development, the education for the disabled comes under the Ministry of Social Justice and Empowerment. Also, the government has failed to expressly include education for the disabled children under the "Education for All" program. The flaws in these two approaches are self-explanatory and in the absence of their correction, inclusive education can never become a part of the policy of education for the disabled children.

It is clear that as far as inclusive education is concerned, Indian legal system has a lot of catching up to do. It is time that the law on disability in India creates an explicit and unequivocal obligation on part of the government to provide education to all students with disabilities in the mainstream educational institutions under a totally inclusive system; and this must become a part and parcel of a holistic education policy in the country.

4

SPECIAL AND INCLUSIVE EDUCATIONAL SERVICES IN INDIA

Sushil Goel and Indumathi Rao

We can't all be an Einstein or Hawking but with a little help we'll do our own talking.

I think it's good that disabled people come to this mainstream school, because that's what it's going to be like when you leave school. It's not going to be a load of disabled people you know. Everybody's going to be mixed—different colors, different sizes. Everyone should get used to it!

—Voices

India has no national level data available on the incidence of disability. As a reference point, the National Sample Survey 1991 suggested that 5 percent of the population have disabilities. This may be extrapolated; hopefully the results of the Census 2001 will help mitigate this situation. The Disability Division, Ministry of Social Justice and Empowerment (MSJE), Government of India, provides financial assistance to over 500 non-governmental organizations (NGOs), but more than thrice that number, are operating with resources garnered from individuals, corporations, donor agencies, religions organizations, and fraternities like the Rotary Clubs. The Constitution of India puts education on the concurrent list under the Seventh Schedule, i.e., it is both a responsibility of the central as well as that of the state governments.

The origin of special education in India can be traced back to the era of *Gurukul* education, which adhered to the fundamental principles of special education like:

- Determining the strengths and needs of each student;
- Individualization of teaching targets and methods to match the skills and interest;
- Preparing the pupils for meeting the societal expectations of their prospective roles. The versatile *guru* churned out illustrious administrators, warriors and priests of the students based on their sociocultural background and capabilities.

Formal education of students with special needs began with the establishment of the first special school in Amritsar in 1887 by Anne Sharpe, a missionary. In post-independence India, the central and state governments paid increasing attention to education as a factor vital to national progress. By 1966 there were 115 schools for the visually handicapped, 70 schools for hearing handicapped, 25 schools for the orthopedically handicapped, and 27 schools for the mentally handicapped. The provision of education of children with disabilities in special schools is still widely practiced. A majority of people, including professionals, teachers, and parents of children with and without disabilities believe that the special school is the most appropriate setting to educate children with disabilities. Although accurate statistics are not available it is estimated that there are more than 1,200 special schools for students with various types of disabilities in towns and cities.

One important concern in the Indian context is that a consolidation of services must be carried out in the rural areas (as more than 75 percent of the population resides there) and the most promising way to do so is through community based rehabilitation (CBR). It is a strategy for enhancing the quality of life of people with disabilities by improving service delivery, by providing more equitable opportunities, and by promoting and protecting their human rights using the same channels of service delivery. This is where the greatest similarity between CBR and the inclusive education movement lies.

Resource Allocation for Education of Disabled Children

The Government of India allocated Rs 4,000 crore for elementary education; and Rs 500 crore for the *Sarva Shiksha Abhiyan* (i.e., Education for All campaign) in the 2002–03 Budget. This allocation cements its intent. It proposes to implement universalization of elementary education in a mission mode with a clear distinct focus to provide quality elementary education to children in the age group of 6–14 years.

Very few states have budgets for CBR, integrated education and inclusive education. For example, only the state of Karnataka has allocated Rs 50 lakh a year for CBR. Since these concepts need more clarity at the operational level, state governments are yet to allocate resources for the same. It is also a fact that disability is still seen as a welfare issue and not as a development issue.

Of course, it needs to be said that money is not the only problem. The attitude of the general education system toward education of children with disability needs major changes for inclusive education to happen at the classroom level. Two ministries at the central level and two departments at the state level look after education of children with disabilities. While the MHRD is responsible for integrated education, the MSJE has the responsibility of special education. This is one of the major hurdles that India has to overcome to take a quantum leap in promoting access to basic education for children with disabilities.

Lack of Data—A Major Obstacle for Resource Allocation

The Government of India accepts that complete data of school going handicapped children is not available. According to the National Institute for the Visually Handicapped, out of the total 200,000 estimated population of school going age, only about 8 to 10 percent visually handicapped children, receive basic school education. And this limited coverage cannot be attributed to limited funding only. There are other factors, such as, (*a*) reluctance on the part of parents to send a blind girl child to school due to social stigma; (*b*) lack of awareness on the part of parents and their tendency to overprotect their disabled children; and (*c*) location of residential schools. In fact, there are many districts without a single residential school thereby denying accessibility to such schools.[1]

National Efforts towards Educational Access

1. **Project for Integrated Education (PIED) and the genesis of Integrated Education for Disabled Children (IEDC) scheme:** The GOI launched the project PIED with assistance from UNICEF in the year 1986. The success of this project resulted in the center sponsored scheme launched by the MHRD, GOI, called "Integrated Education for Children" in the year 1992. This scheme offers financial assistance towards: salary of special teachers, assessment and provision of aid and appliances for children with special needs, training of special teachers, removal of architectural barriers, instructional materials, community mobilization, early detection, and resource support. It should be noted that no state government has state sponsored schemes for inclusive education. However, merely including children with disabilities into mainstream schools is not adequate.
2. **The National Council for Educational Research and Training (NCERT)** is working towards understanding inclusive education in the Indian context and the urgent need to evolve an operational framework for the planning and management of inclusive education. Efforts are being made by NCERT to evolve such a framework in collaboration with NGOs who have initiated successful practices in inclusive education.
3. The role of **National Open School** (NOS) must be highlighted in bringing about flexibility of approach in curriculum and examination procedures. It is becoming increasingly popular with children with special needs. This is because of the flexibility in content and examination procedures.

[1] This information was given by the Minister of State for Social Justice and Empowerment, Maneka Gandhi, in a written reply in the Rajya Sabha.

From Enrollment to Achievements

Even though the term Inclusive Education has replaced integrated education, not many changes are reflected in the form of true inclusive education practices in teacher training curriculum, both at preservice and in-service levels.

It is well known that mere provision of access and enrollment of children with disabilities in schools is not enough for achieving the goal of "education for all." These should be coupled with suitable measures to ensure that children stay in the school to complete the full cycle of primary education. Though most NGOs and governments in different states say that children with disabilities are "doing well" in the schools, there is a need to review policies such as exemptions allowed by the education system for a specific groups of children with disabilities from studying certain subjects in school curricula. This exemption has led to controversy about the quality and future of these children who do not have specific requirements of certain class-level examinations.

NGOs: Main Services Providers

In India the majority of services, be it special, integrated, inclusive, CBR, vocational training or early intervention programs are initiated by NGOs. The genesis of NGO movement can be traced back to the early 1950s. During this period, many parents with children with disability started special schools and organizations of parents to meet the needs of their own children. Logically, such parents belonged to the educated urban communities. It is natural that a majority of these organizations is based in the urban areas. In the 1970s and 1980s, there was a dramatic increase in the number of NGO's in India. International development aid organizations such as NORAD, SIDA, DANIDA, ActionAid, UNICEF and the others, encouraged NGOs to try innovative approaches to reach out to people with disabilities. UNICEF in India also played a significant role in supporting NGOs to try new approaches to reach children with disabilities with innovative programs.

Early Childhood Care and Education (ECCE)

ECCE is essential for countering the physical, intellectual, and emotional deprivation of the child. ECCE is also a support for universalization of elementary education and it also indirectly influences enrollment and retention of girls in primary schools by providing substitute care facilities for younger siblings. At present, the Integrated Child Development Services (ICDS) is the most widespread ECCE provision. Besides, there are preschools, *balwadis* and so on under the Central Social Welfare Board, in addition to some state government schemes and private efforts. Efforts have to be made

to achieve greater convergence of ECCE programs implemented by various government departments as well as voluntary agencies by involving urban local bodies and *gram panchayat*. Further, ECCE will be promoted as a holistic input for fostering health, psychosocial, nutritional and educational development of the child. The role of ICDS in early identification, early stimulation, preschool preparation of children with disabilities is not yet fully explored. Only the Women and Child Development department in Karnataka through the project titled "Udisha Portage" implemented one such initiative of large-scale inclusion of children with special needs using a common delivery mechanism.[2]

Separation of Children from General Education

Since 1975, special education has continued to grow as a separate and *separating* system. As students moved away from the general education environment, they also moved away from the accepted curriculum and expectations that applied to other students in the community. The general education teachers and school personnel began to abrogate responsibility for the education of students with disabilities, while at the same time, these teachers were trained to believe that they did not have the expertise to work with students with disabilities. Separate governance and finance structures were developed to support the separate system of special education. And policies were developed throughout the entire educational system to support a special, separate system of education. Advocates of *inclusion* support the need for specialized services and support, not a *separate* education. They are concerned about the low expectations from students in special education as well as the social isolation that results from students going to essentially (if not actually) different classes and schools with other students not from their community. While families and advocates of inclusion have been working on a student-by-student basis to return segregated students with disabilities to the general education classroom, their efforts have often been met by a culture of negative attitudes towards students with disabilities. Families and inclusion advocates are now working to mitigate the adverse consequences of the plethora of policies, laws, rules and regulations that separate children with disabilities from the general education school, classroom, and students. It is their hope that policies that support the philosophy of specialized services and support in the general education environment may then inform and promote inclusionary practices and student placement decisions for all students with disabilities. Policies that have the effect of segregating students by disability may be found both in general education and special education. Their effect may be by *omission* or *commission*.

[2] Udisha Portage is the largest inclusive education program initiated by the Government of Karnataka in India. This is a World Bank supported program and is implemented with technical support from CBR NETWORK.

5

AN INCLUSIVE WORLD

Renu Singh

Interestingly, innumerable definitions and interpretations of inclusion exist even amongst educators, policymakers and communities (both within and amongst nations) encompassing a multiplicity of conflicting ideologies and practices. For some, inclusion refers to a "different policy approach" vis-à-vis segregation and integration, which proposes that students with disabilities should be considered authentic members of the general education classroom instead of special schools. Others have broadened the term by enforcing that rather than a few students being seen to have "special" needs, inclusion must regard the needs of all students as a part of the fabric of human learning. Thus, inclusion from merely addressing exclusion of children with disabilities from general education, has expanded its mandate to challenging all exclusionary policies and practices in the education system relevant for all excluded groups of learners affected by issues such as poverty, war, neglect or social stratification.

The Larger Picture

There is no discord regarding the universal acceptance that education can play a major role in transforming and creating inclusive societies by shaping the worldview of children, on whom the future depends. Schools are recognized as major arenas of social experience preparing young citizens of the world community. In this light, *inclusion* seems to be the obvious solution for creating a more tolerant, civilized, and plural world community. Concerted efforts thus need to be made to provide students with learning experiences of how to *live together with differences* during the formative years spent in the schools. Young people, who will be part of *schools for all*, will undoubtedly be more likely to form a future society with a conscience. Thus, schools adopting inclusive practices seems the only recourse in order to create an inclusive world, that will be more tolerant and will accept differences.

Inclusion and Social Justice

Inclusion must therefore extend beyond the school boundaries to touch on the formation of self, and the ideologies and values of the wider societal culture. The link between educational inclusion and the wider notion of social justice is both a microcosm and a pathway towards an inclusive society. The linking of education and social justice is of course not new. The belief that the kind of society we create emerges from the kind of education we provide has a long history. If we are to work towards the transformation of the present day world community, education must strive to open its doors to all students, by recognizing the uniqueness and strengths in all students. Human variation and differences are a natural and valuable part of society and this naturally must be reflected in schools.

This argument is furthered by the fundamental principle of inclusive education that diversity within the human community must be valued. When applied to schools, learning environments need to be created in which all students must be valued as equally treasured members of the school community. This belief in inclusion as a means to build a more cohesive society has been reiterated internationally, when 92 governments and 25 international organizations adopted the *Salamanca Statement* and *Framework for Action of Special Needs Education* (1994). The signatories recognized that, regular schools with inclusive orientations are the most effective means of combating discriminatory attitudes, creating welcoming communities, building an inclusive society, and achieving education for all.

Exploring the Present Education System

The current practice of focusing solely on the 3Rs approach has led to education being viewed not as a process, but as a product—the tangible reward consisting of a report, marksheet, or degree at the end. When children fail to learn in schools it is only too tempting to perceive something wrong within them.

Educational activity is one of the many social entities that cannot be examined in isolation. Schooling interconnects with a more extensive and complex reality, reflecting continual changes and transformations with unpredictable outcomes. The character of school activity is not only a mirror of aspects of contemporary modes of production, but also the dominant economic priorities and political activities in society. Many have voiced fears that within this climate it is unlikely that schools will give priority to inclusive values and principles.

Developing an Inclusive Ethos within Schools

Recognition and respect of all children have to be at the forefront while planning schools if inequalities are to be tackled. Maria Montessori, an educator far ahead of her time, in one of her lectures in

India had said: "the world of education is like an island where people, cut-off from the world, are prepared for life by exclusion from it."

For inclusion to move from mere rhetoric, the disadvantaged and marginalized groups of students must not only have access to opportunities and share the same spaces, but also like their peers, must share the common wealth of the school and its culture. Inclusion means inviting those who have been historically been locked out to "come in."

Schools have to change from mere "teaching shops" to inculcating a broader change in their social climate and the way "differences" and "difficulty" is conceptualized in order to foster a "just society." Responses to differences vary amongst communities and indeed within communities. The equality sought through schools, is thus of opportunity and of process not necessarily of outcomes. So, what is equality? "Equality," "sameness" and "difference" do not lie on a continuum, but are the three corners of a triangle. The notion of "equality in difference" is then to treat people as equals but not necessarily the same way. Therefore, it is imperative that schools must recognize a continuum of diverse needs amongst all children and utilize all its available resources to make appropriate provisions to meet their needs.

Inclusion does not necessitate denying differences amongst people; rather, every civilized nation must strive to reduce inequalities which arise from its own structure. Ideal inclusion exists when schools work towards reducing inequalities, which arise from birth or circumstances, rather than exaggerate them. This notion of *ideal inclusion* therefore does not set boundaries around particular kinds of supposed disabilities. Rather, it provides a framework within which all children, regardless of ability, gender, language, ethnic or cultural origin are accepted equally at school. Ideal inclusion thus proposes a far broader yet more distinct a meaning, moving from what is called an "obsession with individual learning difficulties," to an agenda of finding solutions.

Translating Ideology

To translate this ideology into reality, schools would have to undergo a transformation not only in their organization but also in their view of what students need as adults. Thus, schools must not be inclusive in the sense that the "normal" majority tolerates the presence of the "abnormal" minorities in its midst. Rather they should be structurally so designed that all its students are able to learn to the full extent of their capacity.

The question is how can schools improve so dramatically to incorporate an increase in diversity, when it has such obvious difficulty accommodating the student diversity it already has. How schools see integration is crucial; is integration understood as an outsider coming in or as creating a school culture that is open? The acceptance of all those coming in involves reviewing curriculum, pedagogy practice, staff development, teacher education, school structures and organization, beliefs and attitudes to affect a paradigmatic shift, which places the system rather than the individual under scrutiny. Such changes would need to be so profound so as to transform schools into very different entities from the schools we presently know and subscribe to.

Ideal Inclusion: Building Bridges

This emphasis of meeting the challenge of the ideal school inclusion will result in making educational and social sense to all those students who drop out of schools, repeat classes, live on the streets, come from disadvantaged homes or remote tribal areas, are members of ethnic linguistic minorities, child laborers or face gender discrimination.

This involves a serious commitment to the task of identifying, challenging, and contributing to the removal of education systems as they are designed today—based on homogenous delivery rather than diversity. Removing exclusion in and from education is part of the process of reducing exclusion in society. Constantly challenging inequalities of power and recognizing and removing the oppression faced by a large number of excluded children can only realize this. Mahatma Gandhi had advised many decades ago, that education must become co-existent with life. Education, as it is conceived today, is estranged from social life.

Interestingly, the imperative to address the issue of inclusion has been spearheaded by the need to address the value of those students, who were believed to have the least worth for many centuries. To quote Charles Darwin: "it is not the strongest of species that survive, nor the most intelligent, but the ones most responsive to change." Education must therefore reinvent and reconstruct itself so that to be "built to last" is actually "built to change." The goal of developing schools as caring communities for all students may seem a distant dream; but then are not the fantasies of yesterday, the realization of today!

Unit II

Innovations in Implementation

6

HEARING IMPAIRMENT

Sandhya Limaye

Anu Gupta, 10-year-old, studying in grade 4 is tall for her age, pretty and smart. Anu is the only child of her parents. She started using hearing aids since the age of 2 years.

Both parents are chartered accountants and well placed in their profession. The mother takes a keen interest in her child's overall performance and welcomes professional suggestions relating to her education. Mr Gupta is not always available for such tasks, but takes Anu shopping sometimes. Anu's grandparents live in the same building and are supportive and helpful.

Mr and Mrs Gupta came to know of Anu's "bilateral severe to profound hearing loss" when she was one-and-half-years old. Mrs Gupta feels responsible for her daughter's condition as she developed a rash during the first trimester of pregnancy. After learning to cope with her own emotional turmoil, she decided to divert her energy towards providing opportunities for Anu's optimal development. Mrs Gupta subsequently completed a special teacher training course in order to maximally help her daughter acquire communication skills.

Anu was admitted in a special school for hearing impaired children when she was two-and-half-year old. Anu's speech is good, intelligible, and spontaneous. She speaks *Marathi* (her mother tongue) in full sentences. Though her speech is not difficult to understand, Anu at times finds it difficult to comprehend speech. Her mother helps her whenever she is around, and takes care to request others to face Anu while speaking slowly and clearly.

Academically, Anu's performance is good. According to her mother, she studies independently, has good language sense but needs to improve her reading ability.

Anu has lots of hearing friends in the neighborhood and plays comfortably with them. She finds no difficulty in communicating with them as her hearing friends also try to understand her. When Anu is unable to participate in certain games which require auditory training, e.g., *Antakshari*, the children opt to play another game. One of her friends on questioning complained that Anu was rather quarrelsome but always fought verbally!

Anu's mother was influenced by the successful integration of many hearing impaired children. She felt that her own daughter could also be successfully integrated. When Anu was 9 years old, she spoke to the special school principal about integrating Anu and the principal supported her

idea. Her classteacher, however, felt that some more improvement in language skills was necessary before integration could be successful. Mrs Gupta did not entirely agree with this as she felt that in a regular school, Anu would improve her language, and at the same time learn the mores of the "hearing world" leading to self-sufficiency and self-confidence.

At this time Anu's mother was aware that in a regular school, no special attention would be paid to the hearing impaired child by the teachers, that there would be no repetition of instruction, and no facilities of headphones in the classroom. She understood that Anu would have to adjust to a totally new school environment. She discussed these concerns with Anu and recounted the experiences of integrated hearing impaired children. In addition, Anu herself had observed many integrated hearing impaired children and had a chance to meet some of them. The classteacher and mother had both discussed with Anu the differences in the environment of a special and a regular school and that she would have to work very hard in the regular school in order to keep up with her classmates.

Her hearing impaired classmates in the present school pressurized her to remain in the special school. Consequently, Anu was in a dilemma and it was her mother who helped her overcome this dilemma. Mrs Gupta again and again motivated Anu by citing examples of successfully integrated children and also asked Anu to experience the new environment and see if she enjoyed it. Anu was scared and apprehensive and said that she would rely on her mother for assurance and support in the new situation.

As a result of her mother's effort, Anu started looking forward to going to a regular school while on the other hand, her mother started feeling nervous thinking about her daughter's future in the new surroundings!

How Deafness Impacts Parents

The parents' role is vital in the education of the child who is hearing impaired. However, when faced with the diagnosis of "deafness," parents often are in shock. There are three recognized stages that parents deal with when faced with a child's loss of hearing.

The first stage, **Prediagnosis Stage: Awareness and Anticipation**, occurs when the family suspects something is wrong but the full impact is not felt as no accurate diagnosis has been made or confirmed.

The second stage is of **Diagnosis State: Shock and Recognition**. This is usually the first reaction to the discovery of the child's condition. Shock is temporary and progresses into anxiety, fear, and panic. Parents may experience anger, sadness, and even denial.

> A common reason for delay in diagnosis is that hearing loss is rarely "total." Almost all infants can hear horns, banging pots, thunder and other loud sounds. Infants also respond to vibrations.

The third stage is of the **Postdiagnosis Stage: Recovery and Acceptance**. During this stage, most parents accept their child's deafness to a large degree. Acceptance does not mean being content with the situation. It means that the parent is better able to cope with the changes brought to family's life.

What Inclusion Means for Hearing Impaired Students

For hearing impaired children, the question of integration is more complex than it appears. An integrated educational program prepares children for life in a predominantly hearing community, as social, business and professional contacts in life cannot be fully achieved without effective language and communication skills. Hence, the essential first step of integration is to build speech and language skills, which has the dual advantage of developing coping resources.

> The underlying ideology is that integration is the way to provide the hearing impaired child with what she/he cannot gain from hearing impaired environmental experiences.

> Another point is that regular schools provide a more stimulating learning environment with a wider curriculum in a normal oral language environment.

Integration involves the efforts of many people working as a team—the teacher in a regular school, specialist teacher of the deaf, parents of the child, social worker, audiologist and speech therapist. This team effort is a critical requirement in meeting the needs of hearing impaired children in an inclusive set-up.

The Advantages

Interviews and reports of hearing impaired students in the hearing classroom have revealed many advantages, such as:

- the *quality* of the education received in inclusive settings: Special schools for the hearing impaired tend to simplify curriculum, making hearing impaired children, on average, lag far behind hearing students in achievement tests;
- the *value* of education as it enhances career opportunities;
- the *increased opportunity* for attending college and thereby increased opportunity in a hearing world.

The Challenges

Language and communication

For an educational setting to be fully inclusive, all children must have full and uninhibited language and communication access to all facets of the program and personnel.

Points to Remember

- Students need to have direct interaction with the teacher.
- Communication in the school environment does not just occur between teacher and student alone.
- Interaction with peers is crucial for the hearing impaired child.

Cultural needs

Exposure to other hearing impaired individuals is a necessary element of a hearing impaired child's education. These interactions along with other elements in a hearing impaired child's life provide cultural awareness and identity that enhances development of a positive self-concept.

Regular education makes efforts to provide students with a broad range of cultural events and activities that are designed to enlighten students to other cultures and role models. A school that believes in "educating children together" would have to provide the same focus for students who are hearing impaired.

Some Guidelines for an "Ideal" School Environment

- There are hearing impaired teachers on the staff who function as role models not only for students but also for other hearing educators.
- The faculty and staff, both hearing and hearing impaired, have significant roles in shaping school policy.
- The school curriculum embraces history, culture, and literature of deaf people.
- The school gives equal priority to visual (writing, reading, and project work) and auditory (lecture) elements in its teaching method and orientation.
- The school provides a full range of extra-curricular activities and students have a choice in deciding where and how to participate.
- Students are placed in classes after adequate opportunities for assessment of potential.

Prerequisites to the Inclusion Process

Personality Characteristics of the Child

Certain characteristics of the child are important influencing factors, such as willingness to speak to communicate with others, ability to pay attention to a speaker, follow a simple direction, and making inferences from situational clues. As with all children, characteristics like positive self-concept and being able to handle situations involving trial and error, self-confidence, good temper, patience and determination to benefit from the school program are markers for successful integration.

While working with hearing impaired children, there is a need to address concerns regarding the shift from the "special" to the "regular" by encouraging them to express their own feelings, clarify their confusions about their new school setting and thereby help them gain an increased understanding and acceptance of their new situation.

Facilitating the Child

- *Physical preparation* of the to-be-integrated hearing impaired children involves talking to them about change of school and describing the new school, and even physically taking the child to a new school in order to familiarize him/her with the new environment.
- *Emotional preparation* implies working towards reducing the child's fear and anxiety as they enter an altogether new world of hearing children.
- *Academic preparation* ensures that the child has been through an adapted early educational program that combines the acquisition of the basic concepts of number and language.

Emotional Characteristics of the Child

Ambivalence and apprehension

Most children express ambivalence about joining a regular school, voice their apprehensions about peer acceptance, fears about acceptance, about educational performance, and about being in a predominantly hearing classroom.

Fear of managing a new situation

Children express apprehensions about whether they would be able to manage the new situation. Such feelings are common and based on past experience of society's negative attitude towards hearing difficulties. Children realize early that they are different from hearing people and that hearing people are often impatient with their slowness in understanding their communication.

> "What if I do not understand what is taught in the class by the teacher, what would my classmates think of me? Will they want to be friends with me?"
>
> —Anu, the day before she joined her new school

Awareness of new responsibilities

It means children with hearing-loss learning with time that they have responsibilities too, especially in reaching out to establish relationships with peers and by working on overcoming their reservations and inhibitions about mixing with others. Children could also be encouraged to improve their reading and writing abilities in order to cope with the demanding curriculum and to speak with hearing peers to enable fluency of oral speech.

Direct and Personal Messages from the Teacher Help Enormously, Especially during the Initial Phase

It helps to reinforce that:

- Time is required to adjust to the new system, following which classroom instructions would become easier to understand.
- When what is being taught in the class is difficult to understand, it would be most appropriate to ask the teachers for clarification during the class or afterwards.
- By initiating a friendly gesture towards new classmates an important hurdle would be crossed as their hearing classmates might not know how to respond.

Other steps in this direction would be to:

- Introduce the child to other hearing impaired students who may already be enrolled in the school.
- Develop a system of student mentors within the class and within the school.

Parent involvement

A major factor contributing to the successful integration of hearing impaired children in mainstream schools is active, consistent involvement of parents in this process. While most parents express eagerness at the suggestion that their hearing impaired child would now study in a mainstream school, most are not fully aware of the long-term role they would have to play. Special educators and social workers generally assist parents during the initial phase of the integration process after which, parents are generally on their own.

Apprehension: The Predominant Emotion

Parents generally agree that they feel apprehensive and insecure about their decision regarding inclusive education. After 6 months of Anu being in the regular school Anu's mother said she was so anxious about her own problems and how best to cope with them, that she forgot that Anu's teachers and classmates were also facing some of their own!

Guidance and Advice for Parents

- Need to focus attention on developing the child's reading, writing ability, language ability. Need to bear in mind that as the teaching methods used in special school and regular school are different, the child would initially find it difficult to keep pace with other children.
- Understand and acknowledge that the hearing impaired child would continue to need special training in language, speech, and auditory skills.
- Need to remember that since there would be more competition and hence a greater need to be regular and thorough in the lessons taught.
- Realize the importance of social and psychological adjustment of the child.

Preschool programs

When hearing impaired children reach the age of three, they need to develop oral expressive skills (speech) as well as cognitive–academic skills with a focus on language as the fundamental tool of learning. This could be achieved through a preschool program where the child also receives the opportunity to play with other children and acquire a visual language. In the event of such a facility not being available in a particular area, it could be provided by parents at home, through trips to community areas or during playtime in the local park. The basic aim of such organized activity is to widen the experiential base of the child's world.

Early detection, diagnosis, and planning are essential in providing optimal conditions for development and learning. Most hearing impaired infants are as alert and responsive to their families as hearing infants are. The hearing impaired infant applies other strategies and senses such as visual, tactile, olfactory and kinesthetic to compensate for auditory deficits.

Several Core Elements of Early Programs

- Early integration of deaf, hard of hearing, and hearing children.
- Natural signs and gestures as essential to developing a foundation for early communication.
- Early introduction of reading and writing.
- Early intervention programs must be able to enhance the actualization of potential in all areas: hearing, speech, language, motor, cognitive, social, and emotional.

With the growing recognition and acceptance of sign language (SL) it has become evident that parents who use it have the advantage of being able to read to their child, and teach their child to read. One can only imagine the added benefit of such a step in the classroom later on!

On the other hand, teachers need to follow educational principles that include building on the strengths of the children, removing barriers to linguistic accessibility and establishing conditions that maximize the success of social encounters by attending to children's interests, group size, and other variables.

Reaching the Primary Goals of Socialization

Teachers should:

- provide facilitation through the day;
- ensure that hearing impaired children spend the majority of instruction time with hearing peers;
- form groups for structured activities that contain both hearing impaired and hearing children;
- consider play to be the primary medium through which social integration occurs and thus use it as the activity through which intervention is planned, implemented, and monitored in the preschool.

As children progress in their abilities, the teacher's role evolves into one of introducing the learning activity, suggesting play ideas, and facilitating by prompting, modeling, and observing. Evaluation data can be used to reconstruct or adapt activities so that the goals and objectives are achieved.

Parents are encouraged to visit the preschool not only to interact and observe their child, but to receive feedback from the teacher.

Providing an Optimal Learning Environment

Providing the optimum learning environment for hearing impaired students can be successfully achieved by following some simple strategies. These strategies will generally benefit all students in the class, not just those with a hearing loss.

Setting up an Interactive Environment: Merging Similarities and Differences

- Having available children's books on communication, deaf culture and assistive devices to introduce or reinforce experiences and information directly or indirectly disseminated in the program.
- Providing opportunities to learn sign language during hobby/SUPW classes.
- Integrating the deaf culture into units such as a unit on "My Family".
- Giving everyone in the class name signs, incorporating signing into all routines.
- Incorporating into the day, times when sign without speech is used by all, calling attention to manual communication.
- Offering visual clues throughout the day.
- Using visual aids in story time.
- During large group instruction, making sure the teacher keeps mouth clear of obstructions, faces the children who are hearing impaired and does not stand in front of a bright light.

Setting up the Physical Environment

It is important to consider setting up the physical environment in terms of:

- creating a positive listening environment
- positioning the student in the classroom

Creating a positive listening environment

Managing noise: Sounds in the classroom comprise of those that the teacher wants the student to attend to, and those that are in the background. The presence of loud background noise makes listening difficult for all students, but the impact is even greater for students with a hearing loss.

Useful Strategies

- Monitor voice levels. In many instances, as the noise in the classroom gets louder, so does the teacher's voice. Learn to reduce the level of noise in the classroom rather than trying to be heard above it.
- If a choice exists, use closed classrooms for teaching. Open area classrooms generate very high levels of background noise and can be a significant disadvantage for students with hearing loss.

Managing reverberation: Reverberation occurs when sound bounces-off hard surfaces and creates echoes. Teachers can help manage reverberation by:

- Covering bare walls with soft surfaces such as curtains or student artwork on thermacol sheets. Soft surfaces reflect sound less than hard surfaces and so reverberation is reduced.
- Placing large, hard surfaces such as mobile white or blackboards at angles in the room rather than parallel or at right angles to the walls.

Positioning the student in the classroom

Classrooms are active environments, and often involve the movement of both teachers and students. It is important to remember, however, that a student with a hearing loss needs to be positioned appropriately to access all that happens in the class.

General Principles for Positioning of the Student

- Seat the student where they are close to the teacher. A distance of 1–2 meters ensures that the student receives a strong signal and access to speech reading cues.
- If the student has better hearing in one ear, make sure the teacher's voice is on the side that has the better hearing.
- Seat the student away from heavy traffic areas, both inside and outside the classroom.
- Be aware that when an environment is noisy, the student with a hearing loss will rely more on visual cues. Try to make sure that the hearing impaired student has easy visual access to the speaker's face.

Creating a Positive Classroom Environment

A positive classroom environment not only focuses on student learning, but also takes into account the student's social and emotional needs. Every student's social and emotional development is greatly influenced by the range of their experiences, how other people treat them and their ability to express their own feelings, desires and needs, and to understand those of others. This is also true for students with a hearing loss. Sometimes their problems in communicating with others will limit their self-esteem and ability to play and work with others.

"I would talk and lip read. I was also a very fast typist, with a conversation typing speed of about 90 upto 120 wpm. I never learnt sign language, since my parents decided to concentrate on teaching me to talk instead. We used cued speech, a hand language based on sounds. Cued speech uses hand symbols for each sound, and is used in conjunction with lip reading. Sign language uses the arms and hands for each word, phrase or letter. My classmates found me communication fascinating; some even asked me to teach them so that we could *talk* during assembly!"

—Pradeep, remembering years spent in an Inclusive School (presently working at Infosys)

Establishing a positive social climate for the hearing impaired student in the regular classroom is very important. Other students will be quick to mirror teacher attitudes to the student with a hearing loss. For example, a teacher's facial expression and subtle actions will be readily interpreted as to whether the teacher regards the student as an imposition or a valued member of class.

Strategies for Creating a Positive Classroom Environment

- Demonstrate sensitivity in dealing with issues relating to hearing impairment. It is important that the hearing impaired student does not feel different by having too much attention drawn to them.
- Organize a talk or discussion on the process of hearing and the effects of a hearing loss. Use activities like reading in a whisper from an unfamiliar book and challenging the students to rely on lip reading. Discuss with them the level of difficulty involved in the task.
- Provide daily opportunities for the hearing impaired student to communicate with peers and teachers in meaningful conversations.
- Provide opportunities to develop self-esteem. Encourage the valuing of personal ideas and opinions held by all students including the hearing impaired.
- Set high but realistic expectations of the hearing impaired student. As with any other student, there is a need to expect the hearing impaired student to achieve their full potential. Remember that special consideration may need to be given in providing situations where the hearing impaired student can demonstrate their knowledge and skills.
- Expect the hearing impaired student to conform to the same standards of discipline as the rest of the class. Clear limits (as with all students) help the hearing impaired student learn acceptable behavior. It is important, however, to ensure that the hearing impaired student understands all the rules of the classroom clearly. Reminders and explanations of why particular behaviors are inappropriate may need to be reinforced.
- Be aware that the hearing impaired students may have a different concept of personal space and may stand much closer to other people than students with normal hearing do. Discuss this with all students so that the class in general learns to be more aware of this issue. Encourage hearing impaired students not to encroach on the personal space of others. This issue is particularly important for secondary aged students.

Classroom and Instructional Guidelines

It is well-known that classroom practices have a profound effect on the success of the student. The same is true of the classroom with a student who is hearing impaired. The following factors have a positive influence on literacy of ALL students:

Good Teaching Practice

- Repeat
- Rephrase
- Simplify
- Clarify to ensure understanding

- Extensive reading of materials of many kinds, both in school and outside, results in vocabulary growth, comprehension and primarily, in the language or information base of the student.
- Interactive learning in which students are involved in thinking, writing, and talking (or signing) about their subjects produces more effective growth than passive instruction.
- Extension of background knowledge makes the student better in constructing meaning from the text.
- Indepth instruction in reading and writing strategies.
- Integrate activities by organizing instruction into broad, theme-based clusters of work through which literacy (reading and writing) as well as expressive language (speech or sign) is interrelated. This promotes understanding of the connections and significantly assists the child in the classroom.
- Teach skills through direct instruction and not by the assumption that the student will develop them on their own.
- Discussion and analysis that is emphasized by the teacher contributes to effective learning. Rote learning does not stimulate the students' cognitive abilities.
- Reading and reflecting on a range of traditional and nontraditional literature of high quality can help students increase their language base; promote understanding of others, and their values and ideas.
- Emphasis on writing contributes to competence in literacy. Good readers are usually good writers and vice versa. Devoting classroom time to all the processes involved in writing (planning, outlining, drafting, revising, etc.) contributes to competence.
- Language activities should be highly visual, imaginative, rich and informative. Language activities to promote interaction, imagination, and thought.
- Assessment should be appropriate to the physical ability of the student, remembering in the process that the aim is to assess "how much" and not "how little." Generally, the school curriculum has its own assessment guidelines that can include formal and informal testing, teacher observation and standardized testing.

Providing Classroom Supports

The primary academic support needed by hearing impaired students is note taking. There are also other issues involved, including the effective use of classroom space, teaching strategies,

providing out-of-class tutorial help, and the extended use of a resource by both the teacher and the student, alike.

Note Taking

A hearing impaired student has to rely on visual cues to enhance listening skills. When hearing students look down to write in their notebooks, they are unable to continue to follow the lecture or classroom conversation. The alternative of not taking notes at all puts the hearing impaired student at a clear disadvantage. As hearing impaired children move into later grades, where notes become more important in class, hearing students could be asked to volunteer to share their notes with hearing impaired classmates. As an alternative to note taking, teachers may copy their class notes for hearing impaired students. Hearing as well as hearing impaired students benefit from such opportunities, as they then pay attention to what is being taught and less concerned by the "notes" that are vital from the examination point of view.

Other Considerations

There is a variety of other support functions that can be useful for hearing impaired students, both inside and outside the classroom. Surprisingly, permitting the student to audio-record important classroom lectures allows for effective help by parents and support educators.

> As Anu's schooling progressed, it became a struggle to keep pace with classmates. She says: "They could all follow the class lectures and explanations by the teacher in the class, and I struggled to catch the words. So my mother asked the teacher to record what happened in the class, and then in the evening would speak out the lessons; my father helped me with my maths."

Outside of the classroom, hearing impaired students often benefit from the availability of tutors (peers, "off-duty" teachers, or staff hired specially for that purpose). In programs with larger numbers of hearing impaired students, there is the need for a resource room or technical assistance center. Counselors, hearing-aid technicians, and audiologists may be physically housed within these sites, or students may be directed to them by individuals who are involved. Electronic bulletin boards and computer "notes conferences" are options for progressive schools, and users have no way of knowing which students are hearing impaired or blind or physically challenged.

Using Appropriate Teaching Strategies

Many strategies can be used to enhance learning for hearing impaired students. A number of these focus on effective communication. Interestingly, these strategies form the basis of good teaching practices, and are of benefit to all students:

- Face the hearing impaired student when speaking, stand still while speaking and keep hands away from face.
- Be aware that moustaches may make lip reading difficult and should be kept trimmed.

- Use visual cues (e.g., facial expression, posture, natural gesture) to help the student understand what is being said.
- Speak naturally, without exaggerated lip movements.
- Make sure the student's attention has been gained before commencing instructions, discussions or conversation.
- Use short, sequenced statements when giving instructions.
- Draw attention to any change of topic that occurs throughout a discussion.
- Avoid speaking while writing on the board.
- Write any new work on the board, e.g., new vocabulary, content, etc.
- Ensure any necessary vocabulary is known by the hearing impaired student and include activities to extend vocabulary skills.
- Provide tutoring in reading, checking for understanding of the material read by using open questions instead of questions requiring a simple "yes" or "no" answer.
- Modify the classroom program if necessary, e.g., the goals set, strategies used, assessment tools, etc.
- Write a summary of main points on the board to assist the hearing impaired student follow a discussion.
- Encourage participation in extra-curricular activities, e.g., music, drama, and sport.
- Avoid tasks that require divided attention, like working on a writing task while the teacher is still talking.

Building Self-Esteem and Confidence

Interpersonal relations play an important role in all aspects of a student's life. Students' self-esteem is influenced by the learning experiences they are exposed to and their interactions with people around them. A hearing loss, because of its impact on access to the learning environment and communication skills, may therefore have a significant impact on a hearing impaired student's relationship with others.

"The greatest good my parents did for me was to send me to a school for normal children, rather than an institution for the deaf. They brought me up like a normal child, never gave me reason to believe I was different."

—T. Ganeshan, a third year IIT student

Teacher Inputs

- Actively engage the students in sharing their thoughts and beliefs.
- Demonstrate acceptance and valuing of the student through visual and tactile methods as well as using speech, e.g.,
  - ♦ smile and use encouraging facial expressions;
  - ♦ use stickers to reward effort and achievements.

(Contd. on next page)

- Ensure the students have the opportunity to express themselves clearly,
  - ♦ allow extra time, if needed;
  - ♦ provide alternative methods for them to get their message across, e.g., drawing, demonstrating, etc.
- Discuss hearing-loss with the class, being sensitive to the needs of the hearing-impaired student, raise awareness of why special equipment or services are needed by some students, e.g.,
  - ♦ wearing hearing aids means that the student will hear sounds more clearly;
  - ♦ note takers are needed by some students because they cannot listen (watch) to the teacher and take their own notes at the same time.
- Ensure that all students are treated fairly, and explain any special considerations given in terms of doing the *same* thing—just in a *different* way.
- Allow the student to be responsible as much as possible for managing their hearing loss.
- Encourage positive interactions between the hearing impaired students and other classmates and other adults.
- Provide opportunities to practice the behavior and language required in different social situations.
- Encourage a sense of identity by encouraging access to the deaf community.
- Make sure the student clearly understands the task or goal expected of them.
- Praise for achievements in appropriate ways, e.g., using visual and tactile reinforcers as well as verbal praise.

Play and Leisure Activities

"Sports develop qualities of confidence, initiative and ambition. The playing field is a simulation of life; there you go through all the emotions of life, happiness, anger, anxiety, eagerness, enthusiasm, irritation, excitement ...."

—George Abraham, Chairman, Cricket World Cup for the Blind

- Ensure that the specific communication needs of students with hearing impairments are considered during play and leisure activities.
- Students using signed communication need to know the rules of the game. Students with hearing impairments may find it easier to understand a visual representation of the rules of game (e.g., a model drawn on a white board) rather than a complicated verbal explanation.
- For students who use signed communication, it is sometimes necessary to either watch or play. It may be difficult to manipulate play equipment and communicate with hands simultaneously.
- Students who are hearing impaired may need to lip read to understand the message accurately. Be sure that students can see your face when you communicate with them.
- Referees and umpires should ensure that hand signals are clear and visible to the student.
- As many people now have personal computers, electronic mail is also becoming a useful way to communicate with friends.

Care of Hearing Aids during Sports

Hearing aids must be removed before swimming and stored well away from moisture. Ears should be dried well before hearing aids are reinserted.

Supervision

Students may hear little of warning calls or misinterpret the message. Adults supervising hearing impaired students need to deliver any messages from close range to enable the child to use residual hearing and to facilitate lip reading.

Group Size

Group size may need to be smaller because of the need for closer supervision and also because a high level of background noise in larger groups may interfere with hearing aid use.

Administrative Adjustments

Dealing with Parental Concerns

An indepth study conducted by Sandhya Limaye in 1997 indicated that parents had some special expectations from the teacher in the regular school. Awareness of these would help evolve a strategy of action.

- The teacher should allow their child to sit on first bench.
- They should pay extra attention to their child.
- Other hearing children should not trouble their child.
- They should help their children in learning the subjects.
- They should consult parents in case there are difficulties in instruction and behavior.

Counseling Sessions should Address some Key Concerns

- That personal attention from teacher in the classroom may not always be possible due to the large number of students in the regular school. After class, consultation for clarification of doubts could be given as an acceptable option
- Need to enhance the child's gains from the inclusive experience through a collaborative parent–teacher–student triad based on mutual respect.

Dealing with Peers

The objectives of the programs with peers should include:

- Providing factual information about deafness.
- Developing social skills and learning sign language so as to enable them to interact with hearing impaired children.
- Increasing their comfort level with hearing impaired children.
- Fostering a sense of empathy towards hearing impaired children by an adequate understanding of the disorder and what it entails.
- Helping the hearing impaired child when the need arises.

Special Considerations

In the broadest sense providing special considerations optimizes opportunities for all students to:

- Access all aspects of the curriculum.
- Participate fully in all aspects of the curriculum.
- Demonstrate their knowledge and skills.
- Gain positive outcomes.

The term "curriculum" refers to the student's complete range of experiences in their school life, that is, it refers to not just *what* is learnt but *how* and *where* it is learnt.

Barriers which inhibit a student's ability to access, participate, and achieve outcomes can be identified across the curriculum. Special considerations need to be thought of:

- In interactions between students and all other members of the school community.
- In the structure and organization of the whole school (e.g., timetable, behavior management policy).
- In the selection and use of curriculum materials (e.g., worksheets, sport equipment).
- Both within and outside the classroom (e.g., work experience, lunch, in class activities).
- In all classroom settings (e.g., mainstream, unit, small group).
- During extra-curricula activities (e.g., religious education, sports days).
- In specific subjects.

Special considerations stress the principles of fairness and equity for all students. This involves removing disadvantages or "barriers" for any student including deaf/hearing impaired students. Providing special considerations *is not about providing* an advantage for these students over other students. The provision of special considerations may involve *special arrangements* or, in some cases, the granting of exemption to students with special needs.

Special arrangement

Special arrangements involve a practical adjustment of how a task is presented and/or how a student is expected to respond in order to demonstrate their knowledge and skills within the subject. In making this adjustment, the criteria or standards expected are not changed. Special arrangements may involve a wide variety of adjustments, including the teacher:

- Changing the nature of the task (e.g., requiring the student to physically demonstrate the safety skills rather than write an explanation of them).
- Providing specialized equipment.
- Varying the conditions for a task (e.g., providing the student with extra time or alternative seating arrangements).
- Revising the language used within a task (e.g., rewording a worksheet or assessment task so a student can understand it clearly).
- Revising the language expected in student responses (e.g., focusing on the content students give in response rather than vocabulary and grammatical structures used).

The focus of the assessment needs to be borne in mind: Thus, if the focus is on the student's ability to do a task then it is appropriate to adjust the medium of expression, if it is perceived the medium poses a barrier to effective evaluation.

Exemption

Exemption involves a student not undertaking a task expected of other students. Exemptions can be provided only for "nonmandatory" requirements of a syllabus. If exemptions were to be provided for a mandatory requirement, the conditions of the syllabus would not be met, thereby affecting reporting and certification.

For example, the Persons with Disabilities Act, 1995 exempts the hearing impaired student from learning a second language.

It is important that all possible special arrangements are considered to meet the student's needs before exemptions are considered for nonmandatory requirements. Expectations for hearing impaired students should not be lowered simply because the students have a disability. Students should be encouraged to participate in as much of the subject as possible rather than expect exemptions.

Who are special considerations for?

Special considerations need to be considered for all students from early intervention to the end point of schooling. While all students may require special considerations at some time, special considerations need to be considered for hearing impaired students throughout their schooling.

What are the implications of special considerations for hearing impaired students from preschool through to secondary?

Special considerations for primary to grade 12 students need to be applied across the curriculum, in meeting syllabus requirements and in standardized testing like the 10th Board examinations of the CBSE. As special considerations are an integral part of an inclusive curriculum, there are a number of implications for hearing impaired students in terms of access, participation and outcomes. Hearing impaired students are empowered to perform to the best of their ability. Special arrangements in particular (as opposed to exemption) encourage the notion that students "can do," and focus on demonstrating outcomes. Students are not "excused" because they are hearing impaired, rather there is the expectation that they work towards the same outcomes as their hearing peers. This experience throughout their whole school life, empowers students to focus on outcomes and learn that there are various ways to achieve these.

> Chapter V of PWD Act Section 30(H) states: "Restructuring the curriculum for the benefit of students with hearing impairment to facilitate them to take only one language as part of their curriculum." Several states have had their higher educational boards, such as the CBSE, issue directives to their schools regarding this. Check with your State Educational Board if it has been done!

Whose responsibility is it to provide special considerations?

In the majority of cases, it is the responsibility of the school to provide special considerations, with due consultation with the State Education Board. The specific ways in which schools provide special considerations will vary in order to meet the needs of their specific clientele. Schools have been encouraged to develop their own statements that focus on their implementation of special considerations.

When should special considerations be provided in a subject?

Special considerations should be provided whenever a barrier to access and/or participation is identified in a subject. Special considerations can apply more specifically to meeting the requirements of specific syllabi. School administrators need to consider special considerations when:

- Interpreting the syllabus.
- Designing work programs.
- Delivering lessons.
- Designing assessment tasks and examination procedures.

Interpreting the Syllabus

The syllabi define a particular course of study with mandatory and nonmandatory requirements. It is important to remember that:

- Exemptions cannot be provided for core learning outcomes—special arrangements may need to be provided to enable hearing impaired students to demonstrate these outcomes.
- Special arrangements and exemptions may be provided for discretionary learning outcomes.

All syllabi should be examined initially to identify potential barriers to students completing the mandatory requirements (outcomes). It is important to do this before a student commences a course of study so that appropriate decisions and actions can be made. Whilst all barriers may not be identified easily at this point, action prior to commencement reduces the likelihood of the student being disadvantaged during the course of study.

Hearing impaired students should be expected to work towards the same outcomes as their hearing peers. When interpreting syllabus documents, it is important to consider all possible avenues by which a hearing impaired student may demonstrate the outcome required. For example, when a learning outcome requires a student to describe a concept, this may be done in a number of ways including through physical demonstration, structured interview, drawing a diagram, writing, or an oral presentation. Every effort must be made to provide special arrangements to overcome barriers *before* exemptions are considered.

Designing Work Programs

As the work program is the school's implementation of the syllabus, teachers need to advocate strongly for special considerations at this stage. Unlike the syllabus, the work program focuses on set tasks and assessment items that will enable students to demonstrate their knowledge and skills. It is important to examine these and identify potential barriers. Special considerations can then be planned for the student.

A work program shows the way a teacher intends to implement the syllabus with a particular class of students. It involves planning for learning experiences that allow students to demonstrate outcomes over a period of time. The program may have units of work that concentrate on different strands of the syllabus.

It is important to remember that:

- Specific knowledge and skills expected of students need to be identified.
- Barriers to access and participation in both the learning and assessment components of the work program need to be considered.
- Sufficient time needs to be allocated to units of work to meet the needs of all students, e.g., providing time for additional learning experiences to ensure students have the opportunity to gain the same knowledge and skills as their peers. For example, when designing a unit of work to explore the genre of fairytales, it should be remembered that some hearing impaired students may have had limited exposure to this type of narrative. Some hearing impaired

students may also experience difficulties in identifying the moral of a fairytale as this requires higher levels of language skills such as inferencing. Extra time may be devoted to this unit of work to meet the needs of these students so that they have sufficient exposure to the genre to demonstrate their knowledge and skills.

Delivering Lessons

Special considerations need to be provided to enable the student to access the lesson and participate in the class. Classteachers often consider a variety of alternate or adapted tasks to meet the individual needs of students.

Lesson planning involves the design of learning experiences through which the work program is implemented. Learning experiences should be delivered in a way that meets the needs of all students. Many good strategies used by teachers incorporate the provision of special considerations so that hearing impaired students can access and participate in the learning process. Lessons allow the classteacher, and the hearing impaired student to work as a team to find the most suitable arrangements that will lead to positive outcomes.

Many aspects of the lesson need to be examined when planning for the provision of special considerations including:

- Setting
- Mode of communication
- Mode of delivery
- Language used
- Time allocation
- Interactive opportunities

Setting: The choice of setting (e.g., classroom, library, computer room) will have implications for how hearing impaired students access information and participate in the lesson. Factors that need to be considered include:

- Acoustic conditions (e.g., amount of background noise and reverberation).
- Visual conditions (e.g., amount of light and glare).
- Optimum positioning of the student for visual and auditory access (e.g., ability to hear and see the speaker/signer at all times, opportunities to interact with other students).
- Movement of the teacher/signer within the setting (e.g., facing the student, distance from the student, teacher and signer remaining in the same visual field).

Mode of communication: The most appropriate mode of communication will depend on a student's individual needs.

Mode of delivery: The mode of delivery should optimize the hearing impaired student's ability to access and participate in the lesson, such as:

- Chalk and talk (e.g., can the student see the teacher's face/interpreter and watch the board at the same time?)
- Worksheets/textbooks (e.g., does the language allow the student to understand information and questions clearly?)
- Demonstration (e.g., can the student watch the demonstration and follow the explanation at the same time?)
- Investigation (e.g., does the student have the prior knowledge and understanding of concepts required to conduct the investigation? Does the student require scaffolding to undertake the investigation independently?)

Language used: The language used within a lesson may present barriers to access and participation for many hearing impaired students. Hearing loss has a significant impact on language development and a hearing impaired student may have difficulties with specific vocabulary, grammatical structures and different ways of using language. The classteacher needs to consider the student's:

- Overall receptive and expressive language skills (e.g., do worksheets have to be modified? Do instructions need to be rephrased? Is support required for the student's expressive communication to be understood?)
- Familiarity with specific terminology (e.g., is reteaching/reinforcement of vocabulary required?)
- Understanding of language use in specific contexts (e.g., does an explanation need to be given of a particular word or phrase when used in a new context?)
- Familiarity with genres (e.g., does the student need exposure to, or further practice in, report writing or story telling?)

Time allocation: It is important that the time allocated for learning experiences allows students an equal opportunity to demonstrate learning outcomes. The individual needs of a hearing impaired student can have an impact on their rate of progress in lessons. For example, a hearing impaired student may need more learning experiences to develop and generalize concepts, require additional time for messages to be communicated effectively and take longer to process some types of information. When providing special considerations so that the student has adequate time to gain from appropriate learning experiences, classteacher needs to consider the student's:

- Personal experiences which may be different from their hearing peers.
- Understanding of concepts within the unit of work.
- Communication needs.
- Learning style.
- Language skills.

(Contd. on next page)

Interactive opportunities: A range of interactive opportunities within lessons enables the hearing impaired student to feel like a valued member of the class by interacting successfully with their hearing peers. It is also important that the hearing impaired student and classteacher feel confident when interacting with each other. The classteacher should consider the need for special arrangements in the various interactive parts of the lesson such as:

- Teacher questioning (e.g., is the student given enough time to receive and process a question before being expected to answer?)
- Group activities (e.g., have group roles and rules been established to facilitate turn taking?)
- Class discussions (e.g., is a system in place to identify the speaker? Do discussion points need to be recorded on the board?)

Designing Assessment Tasks and Assessment Procedures

Assessment tasks require students to demonstrate their knowledge and skills. The assessment procedures involve the way in which these tasks are administered. Assessment tasks and procedures need to be sensitive to, and inclusive of hearing impaired students.

When designing an assessment task, barriers need to be identified so that special arrangements can be made for students to demonstrate their knowledge and skills. For example:

- The language demands of the task (e.g., are complex sentences used which the hearing impaired student will find difficult to understand? Is new vocabulary introduced that has not been used in class?)
- The nature of the task (e.g., is the student expected to listen or speak clearly in completing the assessment?)
- The need for scaffolding (e.g., is it appropriate for the task to be broken into manageable steps?)

The assessment procedures refer to the conditions under which the assessment is delivered. These include:

- The venue (e.g., do the acoustics and visual conditions provide optimal opportunities for the student? Does the student need a separate venue?)
- The seating arrangements (e.g., does the student need to sit close to the front to see and hear the presenter clearly?)
- The way in which instructions or tasks are delivered (e.g., does the student require spoken directions to be signed?)
- The need for extra time (e.g., how much extra time does the student require to overcome language barriers?)

It is important to remember that:

- A comprehensive range of techniques and assessment instruments should be employed by the teacher.
- A range of contexts and opportunities need to be given to students to demonstrate their knowledge and skills.
- Assessment tasks should cater for different learning styles.
- Students are allowed to negotiate and approach assessment in different ways.
- Assessment tasks should assess a student's knowledge and skills and not how the student can demonstrate these.
- Hearing impaired students are assessed according to the same standards as their hearing peers.

Do special considerations have reporting implications?

Reporting is a record of what the student has demonstrated in order to meet given criteria or standards. The criteria or standards expected of a student are not changed as a result of providing special considerations. Special considerations simply remove the barriers to hearing impaired students which may inhibit them from demonstrating their knowledge and skills.

If students are exempted from mandatory requirements of a syllabus, this is outside the area of special considerations. In these cases, the student's achievement should be reported on an accurate description of the course completed.

Testing

- After tests or quizzes, give answers by using the overhead projector or give answers in writing.
- Avoid overly complicated language in exam questions and clearly separate items when spacing them on the exam sheet.
- Avoid the use of abbreviations or idioms, except for standard ones.
- Due to difficulty with vocabulary, students may require extra time.
- Interpreters may be asked to interpret a test. Because of the complex language involved, an interpreter can often rephrase a question so that a student is able to better understand the intent of the question.
- Supplement oral or signed explanations with written material.
- Use short sentences because they are easier and quicker to comprehend than longer sentences.
- Keep the test reading materials at appropriate reading levels.

Reporting

Reporting is a way of communicating a student's achievements to parents and the community. The provision of special considerations does not affect the reporting of achievement levels if the student

has met the mandatory requirements of the syllabus. Remember—special considerations simply remove barriers to a student's demonstration of their knowledge and skills.

Special Considerations

Primary school

A significant feature of pre and primary school cultures is the high proportion of time the student usually has with the same teacher. The large amount of contact time with the deaf/hearing impaired student assists the classteacher in developing an understanding of what hearing-loss means for that student and how special considerations can best be provided.

Middle and secondary school

A significant feature of middle school culture is the complex timetabling of students, teachers and subjects. Students usually have several teachers who all need to be aware of the students' needs. Classteachers are responsible for a large number of students across different classes, making it hard to keep track of the individual needs of all students.

FACT SHEET 1

Language and Learning

How did you as an infant and young child learn? Whether your native language and background is English, Bengali, Hindi or Marathi, you probably learned about "your world" from infancy by learning to speak your parents' language. You probably learnt from your family members and friends using language on a daily basis. They spoke with you in their native language when you were an infant and just starting life.

For most people, language and learning are acquired exactly this way. That is, receptive language is learned by means of hearing and is expressed by means of speaking. When formulating concepts and ideas, people who can hear spontaneously rehearse spoken words and phrases in their mind prior to speaking them. However, what happens to a child born hearing impaired? What happens to his/her education? How do you educate a child who is born hearing impaired?

There is often confusion among people about the difference between "speech" and "language."

> Dr William Stokoe, linguistic and researcher in the field of hearing impairedness was once asked by a parent of a hearing impaired child: "Isn't speech the most important skill my child needs to learn?" Dr Stokoe replied "Do you want a parrot for a child? Parrots have speech. Parrots do not have language!"

Speech is, "the faculty or act of expressing or describing thoughts, feelings, or perceptions by the articulation of words." The actual concepts, thoughts, perceptions and feelings are developed by and through language. Language is tied to learning and the two are inseparable. This is the key issue in the education of the child who is hearing impaired: developing a rich language base in order to learn skills without the use of hearing. Does it sound simple? Unfortunately, it is not!

How Language Develops

When a baby is born, it can generally see, hear, smell, and respond to touch. The brain stem controls vital functions such as breathing until the brain can complete its "wiring." Over the first few months of life, the brain's higher centers explode with new synapses. By 12 months, the speech centers of the brain are ready to produce the first words.

By the age of 2, a child's brain contains twice as many synapses and can consume twice as much energy as the brain of a normal adult. Over the next six years, the brain sets up the circuitry needed to learn. Language skills are sharpest from birth to approximately age 10. However, it is the first few early years of life that are the most precious for developing language in all children especially the child who is hearing impaired.

Since experience is the chief architect of the brain, early learning experiences create a kind of template around which later brain development is organized. For the child who is hearing impaired, these experiences must be artificially created in an infant/early intervention program and by a skilled teacher of the hearing impaired. However, parent interaction and involvement are vital too.

FACT SHEET 2

Reaching Elementary School Goals: The Challenge of Teaching Literacy

All skills necessary for reading, comprehension, and writing are taught in a progressive manner with each skill and sub-skill building upon the former. By the end of fourth grade, the student should have mastered the necessary literacy skills. After grade 4, the student is expected to apply these skills to content areas in order to progress in learning. Basal reading programs employ either a Bottom-up, Top-down or Interactive Model.

Whole language, another approach to literacy, generally employs an Interactive Model. For classroom instruction, young readers need to encounter print that is meaningful. That means that the concepts are familiar. The teacher must provide the language basis prior to the reading experience in order for the reading encounter to be worthwhile and meaningful.

Generally, these experiences take place before the reading activity. In essence, the student can deal with new language and knowledge on already created skeleton of linguistic information.

Models of Teaching Reading Comprehension

- The *Bottom-up Model* progressed from the smallest unit of reading (such as "a") upwards to larger words. The emphasis is on the identification of words and their parts (phonemes and morphemes). It starts with letters and ends up at the top with comprehension of reading by the student.
- *Top-down Models* begin at the "top" of the reader's head with predictions and inferences (almost like prereading strategies) and proceeds downward to the text to confirm the predictions and inferences or even to create new one. The reading process is considered a language learning process in which the reader uses the text to build from.
- *Interactive Models* views the reading process as interactive. Good readers integrate information from the text with their own knowledge (linguistic base) to get or create meaning. This model uses parts of both of the previous models.

It becomes the task of the teacher to be providing meaningful prereading experiences to create the language necessary to begin the reading task. This is the opposite of the technique employed in regular education in which a field trip or experience takes place during or at the end of the learning experience or unit. Needless to say, a change would benefit all students.

Hearing impaired students need to have some experience with print prior to entering school. For hearing impaired children, building sight vocabulary begins with the semantically significant (meaningful) words, that is, nouns, verbs, adjectives, etc. Sight vocabulary and reading can be accomplished independently, with a group, at home or in large group instruction. The primary challenge of the early elementary years is to keep the student progressing in order to build decoding skills.

What is Decoding?

Decoding can be defined as the process of moving visual perceptions of a printed word to the idea (cognitive). Decoding is a composite of different skills for analyzing various aspects of text.

Decoding skills include: visual and auditory perception; discrimination; identification; classification; sequencing; association; analysis; memory; prediction; problem solving; *plus* adding the word to the student's existing basis of language and knowledge in a meaningful way.

Higher level comprehension, after approximately grade 4, involves the use and understanding of language features. Typically, hearing students have this understanding intuitively from hearing the language but students who are hearing impaired are disadvantaged.

Thus, higher levels of reading comprehension requires: advanced organizers (clues, charts, etc.); content analysis (relationship of words to the text); semantic webbing (mapping); familiarity with figurative language and idioms; ability to make predictions; and, the ability to make inferences.

FACT SHEET 3

Communication Options

There are seven widely used methods of communication available to hearing impaired children.

The Oral Method is taught to communicate primarily by speaking and lip reading. A child's residual hearing is amplified through hearing aids and developed as part of an overall auditory training program. Oral language activities, intense speech training and parental involvement are crucial factors. However, the main focus is on speaking and visually comprehending a speaker's language.

The Acoupedic Method, also an oral method, is an approach that is based on the premise that all hearing impaired children have usable hearing. In this method children are taught to rely less on speech reading and more on using residual hearing that is sharpened with hearing aids and auditory training.

Cued Speech trains hearing impaired children to use speech and speech reading. Speech reading is supplemented by specific hand shapes placed in specific positions to represent the vowel and consonant sounds in spoken English. Because of its focus on speech production, it is considered an oral approach.

The **manual methods of communication** stress the use of gestures and sign language as the primary communication mode for hearing impaired children. Children using this visual method use signs and fingerspelling to communicate their ideas. It is within this method that the use of manual means of communication is effective in teaching language to hearing impaired children. Supporters of the manual method also believe that these children have a better chance of developing social and linguistic competence via signing. However, very few hearing impaired children of hearing parents learn sign language from infancy when learning language is easiest and mastery is greatest.

In a **Bicultural Environment,** hearing impaired children learn about deaf history, the deaf culture, as well as the customs and language of the deaf culture. They also develop a strong sense of identity through the study of the contributions of hearing impaired people, the historical aspects of deaf culture along with information concerning the hearing world. In this environment, sign language (SL) is the language of instruction. All members of the school community must be proficient in SL. In addition, in this environment, the curriculum presented is not watered down, only approached differently.

Total Communication (TC) promotes the use of all possible communication methods such as: listening, speech reading, signing, visual images, mime, etc. All of this is done to assist the hearing impaired children in acquiring language and understanding its use. Currently, English (either spoken or signed) is predominant in these educational programs using TC.

FACT SHEET 4

Towards an Understanding of Hearing Impairment

In order to understand hearing loss, it is first necessary to understand the structure of the ear and how we hear.

Structure of the Ear

The human ear is an amazingly complex structure. It consists of three main sections each of which plays an important role in the hearing process, these are the outer ear, the middle ear and the inner ear.

- Outer ear: The outer ear consists of the fleshy part and the ear canal.
- Middle ear: The middle ear consists of the ear drum, a chain of ossicles, and the Eustachian tube. The Eustachian tube plays an important role in maintaining this equilibrium.
- Inner ear: The inner ear consists of the cochlea and the vestibular system. The cochlea plays a critical part in the hearing process and contains hair cells that trigger electrical responses along the auditory nerve to the brain. The semicircular canals play an important role in maintaining balance, but play no part in the hearing process.

How Hearing Takes Place

The process of hearing is quite complex. Briefly, sound travels down the outer ear, through the middle ear to the inner ear where it is turned into electrical signals which are carried along the auditory nerve to the brain.

For normal hearing to occur:

- Sound must be able to travel unimpeded through the outer ear and middle ear to the inner ear.
- Sound must be converted into electrical signals in the inner ear and this signal must travel along the auditory nerve to the brain.

Hearing Loss

A hearing loss may occur if any aspect of the hearing process is interfered with. Some examples of difficulties which will result in hearing loss include:

- Sound may travel down the outer ear but does not pass efficiently through the middle ear as it is full of fluid, and so the ossicles do not work effectively.

- Sound may travel down the outer ear and pass efficiently through the middle ear but does not get converted into electrical signals in the inner ear. This is usually because the tiny hair cells in the inner ear have been damaged.

Measuring Hearing Loss

Hearing tests help determine the type and the severity of the hearing loss. One of the most common tests used is the *Pure Tone Audiometry*. During this test the person is asked to listen to pure tones of varying frequencies and the audiologist determines how loud the sound needs to be before it can be heard. The results are plotted on an *audiogram* (a graph).

The test is conducted twice—once without hearing aids, the *unaided audiogram*; and after the hearing loss has been diagnosed with at least one hearing aid fitted, called the *aided audiogram*. The difference between these two audiograms shows how much amplification the hearing aids are giving. As hearing loss can change over time, it needs to be monitored annually.

Implications for the Teacher

If the classroom teacher understands the basic concepts underlying hearing loss, the support provided is likely to be more effective.

Describing Hearing Loss

In describing a hearing loss, a number of questions need to be addressed:

When Did the Hearing Loss Occur?

Any hearing loss that is present at birth or soon after is referred to as *congenital*. Hearing loss which occurs later in life is referred to as *acquired*.

- The earlier a hearing loss occurs, the more significant its impact will be. Children who are born with a hearing loss have limited access to the sounds around them (including speech) from the very beginning.
- Hearing loss that occurs before a child develops speech and language skills is referred to as *prelingual*. Hearing loss that occurs after a child develops speech and language skills is known as *postlingual*.
- The effects of a prelingual hearing loss are usually much more significant than a postlingual hearing loss. The challenge faced by a young child with a prelingual hearing loss is to develop normal spoken language skills and this can sometimes be an enormously difficult task. The challenge faced by a student with a postlingual hearing loss is to learn to manage their hearing loss in order to minimize its impact on their daily life.

What Type of Hearing Loss is it?

When a hearing loss occurs because the sound cannot travel freely down the outer ear and through the middle ear, it is referred to as *conductive*. Hearing loss which is caused by the sound not being converted into electrical signals within the inner ear, or not being transmitted along the auditory nerve to the brain is referred to as sensorineural hearing loss. Some students experience both conductive and sensorineural hearing loss, which is referred to as a *mixed* hearing loss.

How Severe is the Hearing Loss?

When hearing loss is measured, it can be described in terms of being *mild*, *moderate*, *severe* or *profound*.

Mild loss (21–40 dB)

A student with a mild hearing loss may have difficulty hearing soft or distant speech. They may also have difficulty hearing normal conversation in situations where there is a lot of background noise. Many students with mild hearing loss do not wear hearing aids. As the loss gets closer to the outer limit (40 dB) however, some students will benefit from the amplification a hearing aid provides.

Effect of Mild Hearing Loss

A student with a mild hearing loss will not usually have difficulties in school. They may, however, have difficulty understanding what is being said if they are in very noisy environments.

Moderate loss (41–55 dB)

A moderate hearing loss means that the amplification a hearing aid provides is essential for the student to understand normal speech. Without a hearing aid, the student would need to rely on speech reading cues. The level of concentration required to lip read is very difficult to maintain over long periods of time.

Note

Hearing aids make sounds louder for the student (and this makes comprehension easier) but they do not restore normal hearing.

Moderate–severe loss (56–70 dB)

A moderate to severe hearing loss means that the amplification a hearing aid provides is essential for the student. Without this aid, the student's speech and language patterns may not have a chance of developing in an appropriate, spontaneous manner. The reduced quality of sound a deaf/hearing impaired student receives may affect the quality of their speech. Specific training, however, can help students recognize most speech sounds and some of these will be reflected in their own

speech. Even with hearing aids, a student with a moderate to severe hearing loss will rely on lip reading cues.

Severe loss (71–90 dB)

A severe hearing loss means that a student will have difficulty understanding normal speech even when wearing their hearing aids. They would not detect normal conversation without their hearing aid but may hear loud voices at close distances (up to 1 meter).

Profound loss (91 dB plus)

A profound hearing loss means that the student will always have trouble understanding conversational speech even with their hearing aids, and would not detect even the loudest components of shouting unaided (without their hearing aid). Students with a profound hearing loss exhibit a wide range of communication skills. Some students are able to develop listening and oral communication skills to a degree where they use these as their main means of communication. Other students may need, or prefer, to rely on manual communication skills such as signing.

Effect of Moderate to Profound Hearing Loss

- Miss a lot of the class discussion including key context and content.
- Have a limited vocabulary.
- Miss words and word endings, commonly leaving off "s," "ing," and "ed" in their speech and their writing.
- Have trouble explaining their ideas to other people.
- Have problems pronouncing some speech sounds.
- Become very tired towards the end of sessions that have required intense concentration.
- Misinterpret what is said although they "hear" the speaker.
- Misinterpret oral reading materials.
- Have difficulty understanding complex sentences use a limited range of sentence structures and therefore use the same sentence structure repetitively (e.g., subject, verb, object).
- Have poor vocal quality.

Is there a Hearing Loss in Both Ears?

When there is a hearing loss in both ears, this is referred to as *bilateral* hearing loss. If hearing is normal in one ear, but there is a hearing loss in the other ear, it's referred as *unilateral* hearing loss.

Students with a unilateral hearing loss may have difficulty hearing well in noisy conditions and may have difficulty locating where sound is coming from. Teachers should make sure that students with a unilateral hearing loss always sit with their "good ear" closer to the speaker.

Is the Hearing Loss the Same in Both Ears?

When hearing loss is similar in both ears, this is referred as *symmetrical*. If the hearing loss is different in each ear, this is referred as an *asymmetrical* hearing loss. If the loss is very different in each ear, the student may experience difficulties similar to those associated with unilateral loss. Sometimes only the "better ear" is to be fitted with a hearing aid.

Is the Hearing Loss Stable over Time?

Hearing loss does not always remain the same over time. Some hearing losses, particularly conductive, may go up and down frequently. This is referred to as a *fluctuating* hearing loss. Students with fluctuating conductive hearing loss may develop very poor listening skills. Some hearing losses may get worse overtime. This is referred to as a *deteriorating* hearing loss. Students with a deteriorating hearing loss may show a decline in their speech and listening skills over time.

FACT SHEET 5

Accessing the Curriculum

A number of technical aids are available to assist the student in accessing the curriculum. As language and listening are key elements in the daily routine of the classroom, hearing aids in good working condition are a critical factor in the student's success. Some basic information on what the hearing aid can, and cannot do will increase the comfort level of all members of the school.

All hearing aids operate in the same way, i.e., they pick up sounds in the environment and amplify them (make them louder). One of the limitations of hearing aids is that they amplify all sounds, not just speech. Sounds closest to the microphone, will be amplified the most. This means, in noisy environments it may be very difficult for the deaf/hearing impaired student to understand clearly what is being said by the teacher. For students to get optimum benefit from their hearing aids in the classroom, teachers should speak at a normal conversational level with clear pronunciation. Hearing aids come in various sizes, styles, and shapes. Different hearing aids can be fitted to different hearing losses and to different ear shapes. Hearing aids can be body worn or located behind the ear, in the ear or in the canal.

What a Hearing Aid Does

- Make sounds louder, but not clearer.
- May not pick up some pitches of sound.
- May distort some sounds.

Body Worn Hearing Aids

These were the original hearing aids fitted. They consist of a box which contains an amplifier, microphone, and battery. This box may be worn in a pocket, in a harness on the body, or clipped onto a belt. A cord connects the amplifier to the ear mold which is inserted into the ear.

Behind the Ear Hearing Aids (BTE)

BTE aids are the most popular style of hearing aid. In the BTE aid, the microphone, amplifier and ear phone are all contained within the body of the aid which is worn behind the ear. An ear hook and tubing connects the aid to the ear mold which is inserted into the ear.

In-the-Ear Hearing Aids (ITE) and In-the-Canal Hearing Aids (ITC)

ITE aids have the whole hearing aid (amplifier, microphone, and ear phone) built into the ear mold so that the entire hearing aid can be fitted into the ear. ITC aids are even more compact as all parts fit into the ear canal itself.

Precautions

Daily listening check of a hearing aid

It is important that a daily listening check be carried out to ensure all parts of the hearing aid are working properly. Older students may be responsible for monitoring their aids themselves, while the teacher will need to check younger students' hearing aids.

Troubleshooting

The following problems maybe identified in the daily check, by the student themselves, or through observation of student behavior:

Acoustic feedback: Acoustic feedback is a continuous, unpleasant whistling or shrill noise heard when the hearing aid is being worn by the student. If this occurs, check that:

- the mold fits snugly in the ear;
- the tubing has no splits, holes or twists;
- the tubing has not been removed from the mould;
- the volume is turned to the recommended setting.

If acoustic feedback continues, the problem should be referred to an audiologist.

Absence or poor quantity of sound: If the aid does not seem to be working at all or the signal seems soft, check that:

- the hearing aid is turned on;
- the volume control is at the correct level;
- the tubing is not blocked by moisture buildup;
- the mold is clear of wax;
- the battery is charged, and in good condition.

If there is a wax buildup, this should be cleaned. Take the mold off the hearing aid, wash in warm water and dry with a cloth.

Intermittent sound: If the amplification does not seem constant, e.g., the signal cuts in and out, the hearing aid should be sent for repair.

Distortion of some/all sounds: If the quality of the signal is affected, e.g., sounds seem strange or fuzzy, the hearing aid should be sent for repair.

Interference: If there is interference, e.g., static noise interrupting the signal, the hearing aid should be sent for repair.

My Story

I graduated with a distinction as a textile designer from Srishti—School of Art Design and Technology, Bangalore in the year 2002. That day 16 other students too graduated from Srishti. The only thing that made me different from the other graduates was that I am hearing impaired as well as dyslexic.

I was diagnosed with a high degree of hearing impairment (hearing loss of 90 dB in both ears) when I was around 3 years old. Soon after I was admitted to a special school for the young hearing impaired (Balavidyalaya) in Chennai. I was given intensive training for 5 years where I was taught how to speak, using a hearing aid, lip read and also reading, writing and maths like any other pre-schooler. It was when I was 7 years old, I was asked to try out a mainstream school on a trial basis, which I did. I joined second standard and mixed well with children and the teachers there. I was not asked or questioned about my hearing disability by the kids or the teachers there. They just accepted me. Some did question my parents about my hearing aids, as they did not know what it was or it's purpose. My mother once told me that a man scolded her for letting me use a "walkman" since he felt I was too young to use one. Now, I laugh when I think that someone actually thought a pocket hearing aid was a walkman.

After a year I was asked to attend a regular school full time, I came back to Cochin, Kerala. I joined third standard in Naval Public School. There, I was treated as a complete stranger by my peers, the older children and also by my teachers. Not being accepted had often upset me and raised a lot of questions in me about my hearing impairment. Children would stare at me and at my hearing aid and sometimes, make fun of me. But their curiosity would get the better of them and they would ask me what I was wearing and I would say "I'm deaf, I can't hear anything without it. I'm not like you. You can hear normally." I even demonstrated how my hearing aid worked and some of the children even tried out my hearing aid. A word of advice—do not let children try out other children's hearing aids as it can spread ear infection. I learned that later. Showing my hearing aid and explaining my hearing loss was an icebreaker for me. Since I was also able to lip read, very often we used to have a game of lipreading whenever we had free time and I would win the game. The children of my class and the other children and teachers finally, accepted me. I made lots of friends and even got invited to their birthday parties and vice versa. My friends also helped me in class with notes.

Academically I did fairly well in my studies and did my homework. During homework, my parents had divided the subjects amongst them, for helping me in my daily studies and preparing for exams. My father would teach me all the social studies subjects, while my mom helped me in all Science, Maths and English. My parents even helped me with my project and other assignments—wherever I had a difficulty.

In school, we had exams every week with a different subject each week. For these tests we had to learn one-and-a-half-month's portion as the subjects were always taken up in rotation. This made it difficult for me to cope with homework and studying for the exams every week. This even made me have less time for myself whenever I went home in the evening and I began to spend less time playing with my neighbors and other friends.

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As I approached my eighth standard, the weekly tests continued, studies became more difficult for me, as I found it difficult to grasp the concepts. For example, I found it difficult to understand poetry; the technical terms used in Physics and Chemistry and had difficulty in solving Math problems. These were the subjects I did poorly in. Eventually the teachers became stricter with me and often punished me for doing badly. These punishments did not help me to study or do better in class!

I passed my board exams with a First class from the Central Board of Secondary Education (CBSE) exams. Since I did not take Hindi, I had options of subjects to replace my Hindi exam, therefore, I took art. During my board exams, I was given special permission for half-an-hour extra to complete and review my exam papers because of my hearing disability.

Due to my difficulties in studies, I went to the US with my parents, after my tenth standard, where I went to the Boston Children's Hospital. There I underwent few further tests, and was diagnosed as Dyslexic, which gave the reason why I had difficulty in grasping the lessons.

I would take part in various activities or competitions like painting, fancy dress, dance and sport activities like volleyball, basketball, etc. I also became a part of the Children's Theatre, where we used to put up plays for the public. To me it was a wonderful experience because we would experiment with our body in movements, facial and voice expressions. It was fun.

After passing out of tenth standard, I joined The Valley School in Bangalore. There I took subjects such as Engineering drawing, Fine arts, Physical education and English.

Again my fear grew, as to how my peers or other children would accept me. I felt like I was in "third standard" all over again. But on the very first day of school I quickly made friends with my classmates and other children. They were all open-minded and did not question about my hearing aid or sympathize with me. The teachers understood my difficulty and did not ask awkward questions. In the classroom, it was easier getting the teacher's attention because of its small size with only 15 students. It helped me a lot and I was able to understand better in class and therefore was able to do well academically.

When I got admission into Srishti, I was happy, because it was a small institute with only about 100 students. This time I was not too worried about once again entering a new place and having new friends all over again. I felt more confident of myself and did not care if anyone questioned about my disability. I realized, the more confident I acted about my disability. People accepted me as "normal" and it was wonderful being "normal" and not "deaf." Having been exposed to different groups of people each time I became confident especially when I moved away from home and from Cochin. I felt independent—and not dependent on my family the whole time. I even learned to move around Bangalore on my own by bus or by auto and "hang out" in the city with my friends at the movies, pubs, and discos.

Source: Anupama Narayan.

An Enriching Experience

My mother was strict. If she said no to something we knew that was not to change. Of us, the three brother and sisters, I was the naughtiest and received the maximum punishment. I secretly bore a grudge against her.

But as I grew, I do not know when we became the closest of friends. How my role changed and she started depending on me. I could fully understand her when I became a mother myself and undertook the task of rearing my child.

My daughter is 11, studying in a school in grade 6 in Kolkata. I am proud of her and dream that people around her will be proud of her too someday.

She is different. She was born without the gift of hearing. She has a profound binaural sensory neural loss of hearing (highest degree of nerve deafness in both the ears).

Such children in our country are termed as deaf and dumb. A very small percentage of them go to special schools, receive insignificant education, use sign language and live in a silent world of isolation. A still more minute section of them are fortunate enough to receive education in general schools. The rest of them, mostly living in villages, receive nothing at all. I consider myself very fortunate that I could give her a different life. But she was integrated right from the beginning. And what is more significant is that she looks at her impairment as a part of her life and she is willing to work harder to keep pace with her friends. She learns to dance, writes poems, she has a long list of hearing friends. She is a happy child.

Coming upto this state has been a long journey, which is still on ....

It took me several months to come to terms with her disability. It was a shocking experience as I knew nothing about deafness and never heard of anybody being deaf within our family and friends. It was doubly shocking as it was revealed to us when we expected it in the least. The doctor who had said she was perfectly all right at the age of eight months, pronounced her to be deaf when she was a year old.

I was angry with the doctor for wasting four invaluable months of my daughter's life. But as I got to meet more children and their families, I realised how due to lack of awareness of professionals, precious years were wasted for children and how their helpless parents were silent witnesses to the ruination of their children.

Within two weeks of her first birthday, Sneha was wearing hearing aids. As she was very small she was given a pair of pocket hearing aids. She looked like a little robot with the hearing aids on her little body and two speakers plugged in her ears. And every week I took her to a center which was an eight-hour journey to and fro.

I learnt technical issues like audiology and its crucial importance in the language development of a child with hearing impairment at the center, I have also learnt social issues like inclusion and about the rights of these children there. I have been instilled with the confidence that she is as capable as any other child and that she can grow just as much.

That little 1-year-old Sneha is 11 today, studying in grade 6. When I look back to those days when I was trying to put her in a regular school, what I experienced was more of ignorance than unwillingness, more of apprehension than negligence. People do not know much about disability, so

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they fear an encounter with it. This ignorance and fear of the unknown leads to a negative attitude. Once this barrier is overcome, things can be much brighter and in the process both the school authorities and the parents can develop a rational expectation of one another and can even compliment each other. I can say this from my life's experience.

I learnt that the school can play a very important role in integrating a child with a disability. The children follow the teachers as their role models and this is the time when their characters and personalities are being formed. In an inclusive school, it is not only the children with special needs, who benefit from the school but the other children also receive valuable education through simply being friends with them. They learn inclusion through a daily practice and grow up as socially responsible individuals.

My daughter's school does not have a special support structure. However, they have given her a positive and friendly environment. They have encouraged other children to be friends with her. They have made the little adjustments possible for her within their framework.

During these years of trying to provide opportunities, I have learnt some valuable lessons:

1. Just studying in a regular school is not enough. We must accept that children with hearing difficulties have certain special needs, which can be addressed by the general school but in collaboration with special schools, who have the expertise and the knowledge gathered after working with them.
2. The role of special schools and the NGOs that work with children with disabilities needs to be realigned. Unfortunately, there is a lack of awareness in this quarter also. Not all-special schools in India are oriented with the idea of inclusive education and are not strong advocates in its favor. Regular schools and special schools need to join hands to see that there is no duplication of resource development.
3. The fact that children with different disabilities do not succeed educationally is because we do not provide them with the necessary infrastructure to cope with the curriculum effectively—in the light of the fact that they are as capable as any other child. Those who get the benefit of support in a regular setting from an early age, succeed.
4. But these successes have a tremendous toil and struggle behind them. The few successes that we can see around us are because of the endless sacrifice of families, fighting against all odds at every step. Helping the child with the curriculum in school, dealing with hearing aid management, providing ongoing support from the special school are just some of the tasks that are difficult especially for low-income families.

Source: Snigdha Sarkar.

7

VISION IMPAIRMENT

George Abraham

Prachi and Pragya Mahajan are twins who were born with vision impairment. In fact, they are both totally blind. They are the only children of Jayant and Manjula Mahajan. Girls, and blind at that, imagine what the parents and the family must have been through! They would have experienced a tornado of emotions ranging from disappointment and frustration to despair.

Credit should be given to Manjula and Jayant Mahajan who though disappointed; continued to nurture their children. They were at a loss for ideas; they did not know what to do? They did not want their lovely daughters to be wasted away. They were fortunate to get positive advice from friends as well as the National Association for the Blind (NAB), New Delhi. They also had the opportunity to meet with a couple of visually impaired persons who were leading perfectly normal and reasonably successful lives.

The Mahajans were quick to spot the light at the end of the dark tunnel that they believed they were in. They started realizing that the situation was actually not as bad as they had imagined. The focus was no longer on the blindness and the limitations that came with it. The thoughts were no longer on their disappointments or so called misfortunes. The quest for information and direction had become top priority. They were advised to bring up their daughters as normal children.

Prachi and Pragya became the heart and soul of the family. They were showered with love and attention. The parents ensured that the twins passed every milestone of growth on time. Whenever in doubt, they sought direction from either NAB or from vision-impaired role model friends.

Between the age of 3 and 6 years, the Mahajans provided the girls the opportunity to evolve, learning about themselves, and the world around them. Everyday was a new lesson in life and how to live it. They were toilet trained, were taught to have a bath, dress, and comb their hair independently. They were given instructions in orientation and mobility. They were introduced to the world of colors, shapes, and textures. They learnt to appreciate and enjoy music, rhythm, and the power of group dynamics.

By the time the girls were 6, they were independent as far as their daily-living skills were concerned, and had a reasonable understanding of personal hygiene and cleanliness. They could

move about with confidence. They could recite poems, answer questions, and interact socially with poise.

Prachi and Pragya, today study in grade 2 at the Springdales School, Dhaula Kuan, New Delhi. Admission was difficult to obtain in the beginning. However persistence paid. The Mahajans were a little disappointed that no schools in the neighborhood were willing to take in their children. The children love going to school. They have made friends. They not only learn in the classroom, but also take part in sports, quiz, music, and outings. The Mahajans have dreams for their twins. They feel that Prachi would be working as a consultant one day in law, management or human resource, while Pragya would do well in academics or in music. The Mahajans are constantly in touch with the teachers and are all the time exploring avenues for their adorable twins to embark upon. Power be to the Mahajans!

Early Identification and Timely Interventions

It is indeed important to identify the children with vision impairment as early as possible. Timely intervention has to be ensured for the child in terms of suitable stimuli to achieve normal milestones and pave the way for their all-round development. Psychologists will affirm that the first 4 to 5 years of a child's life are the most vital.

Parents, pediatricians, paramedical professionals, and health workers have a major responsibility in identifying children with vision impairment. A delay in identification could well mean a delay in growth and development opportunities. Special schools, NGOs, primary healthcare centers and the *Anganwadi* workers need to play an active role in this effort, particularly in the rural areas and in the city slums.

In this Context

- Primary school teachers, community health workers and *Anganwadi* workers have to be trained in simple eye-screening techniques.
- Community awareness and education programs should be planned with the object of informing the people about the potential of children with vision impairment, the educational opportunities available, the basic preschool inputs and simple action plans.
- Parents have to be counseled, guided, educated, and motivated. They have to be coached on what they should be doing. They need to be convinced that their vision impaired children can be educated and they become self-reliant.

Assessment

Once the children with vision impairment are identified, they need to be examined and assessed by an ophthalmologist. There would be a number of children whose vision could be corrected or restored through surgery or simple refractive correction. These children can be very easily treated

Models of Management

The management of inclusive education in India has over the years developed varying models to address the issue:

1. Resource models where children with vision impairment study in general schools and stay in hostels meant for non-disabled children.
2. Resource models where children with vision impairment study in general schools and stay in hostels for disabled children.
3. Resource models where children with vision impairment study in general schools and stay with parents at home.
4. Semi-resource models or co-operative models where children with vision impairments are taught only by the resource teacher in a separate class in a general school.
5. Itinerant model where a resource teacher visits the child in his/her local school and the child stays with parents.
6. Multi-category resource models where vision impaired children are educated in a general school by the regular teachers and a special educator.
7. Multi-category itinerant model where one special teacher attends to the needs of disabled children of different categories in a particular locality.

and then brought into the mainstream of life. The Venu Eye Institute and Shroff's Charity Eye Hospital have set up a pediatric ophthalmology department at New Delhi, to assess and treat children with vision impairment.

Children whose eye conditions cannot be corrected with surgery, medicines or with spectacles should also be assessed by ophthalmologists. Vision has to be assessed and the status of vision documented in terms of visual acuity, field, the cause for the eye condition, and the prognosis. Family and parents should be counseled and advised about the condition. They should be encouraged to plan the rehabilitation program for their child. Children with low vision and partial blindness must be encouraged to use their residual vision as much as possible. Children with total vision-loss should be advised to visit the nearest special school for assistance, while children with residual vision must first see a low vision practitioner.

Children use all their five senses to acquire information and stimulus to evolve. If the eyes are non-functional or malfunctioning, then the child is denied access to the information that would normally be picked up by the eye. Special effort must be made to provide the child with the alternative means to access relevant stimulus to enable development to proceed in its normal pace.

For instance, a child normally starts to try and walk when the child begins to realize that people around are walking on their legs. The child sees this and is motivated to try and emulate. Thus begins its efforts to learn how to walk. A visually impaired child needs to be stimulated differently. Pragya, for example, initially was taught to walk standing on her mother's feet. She was scared of putting her feet on the floor. She took nearly a month to learn walking. Similarly, there are a number of activities and skills that the child learns through sight. The parents or the special educator has to stimulate and work closely with the child to help it acquire the skill.

This is equally true for the child with low vision or partial vision who must be thoroughly examined and evaluated by a low vision specialist for their distance vision, near vision, vision in different light conditions, the field, and functional vision parameters. The child's rehabilitation program must be planned based on the low vision assessment. The child must be trained and motivated to use his/her eyesight right from the early days. Their ability to focus, establish eye contact while talking, tracking moving objects, hand-eye coordination, concepts of shapes and colors, etc., must be developed. Further, the child also must be introduced into the world of reading and writing. While the totally blind children are introduced to Braille, children with residual vision must be taught to read print.

By the age of 5 and 6, the child has to be ready to get into school. The child:

1. Should be trained in orientation and mobility. Should be able to move about with confidence. Totally blind children should be adept at the use of the cane, while children with low or partial vision should be able to move about using their sight.
2. Should be able to handle daily living skills independently.
3. Should have reasonable communication skills and interact socially with confidence.
4. Should have a working knowledge of reading and writing Braille or print.
5. Should have an understanding of the concept of numbers and the use of the Taylor frame.
6. Should be familiar with shapes, textures, and colors.

Once the child has the above skills, he or she is ready to take on the challenges of mainstream school life. The parents and the special education teachers must see to it that the children are trained and ready for school by the appropriate age.

Orientation

The introduction of the visually impaired child to the mainstream school should begin with an orientation program. The child must have an overall picture of the lay of the land. They must know where the classrooms are, where the library, the canteen, toilets, resource room, principle's office, staff room, play ground, and the gymnasium are. The child must be orientated to the different levels, staircases, floor textures, etc. The idea is that the child should be able to move about the school independently without fear or doubt.

The child must be introduced to the teachers and officials of the school. The teachers who would be directly involved with the child must be briefed on the child's background, eye condition, and its prognosis. The teacher must be asked to:

1. Assign a front seat to the child.
2. Use more of verbal communication; speak out whatever is written on the board.
3. Encourage classmates to read out whatever is on the board.
4. Ensure that the child has all the notes of the work done in class.

5. Follow all classroom norms, i.e., that he or she is expected to do homework and adhere to class discipline. If violated, the child must be pulled up like others.
6. Remember that no special treatment or privileges will be provided on sympathetic grounds.

After school hours, the parents could provide some help. The children could be helped with their homework, revision of class work, and in preparing for the following days' activities. The children should be encouraged to make their notes in Braille or on audiotapes. In senior classes, computers could be used. This daily routine would help the child to not only keep pace with the class, but also in actively participating in its proceedings.

There has to be regular interaction between the parents, the special teachers and the schoolteachers to discuss the problems and challenges and seek solutions. Parents and special educators thus become resources for the teacher. It could be a very useful and profitable collaboration.

Mayank Sharma was a grade 3 student at the Ramjas School, New Delhi. He was partially blind and could not see the writing on the board. The teachers did not have any experience in handling vision impaired children. They were sympathetic and considerate, but felt that Mayank should be taken out of the school and put into a blind school since they felt rather helpless in handling him. Mayank never did his homework, never wrote his notes in class and often was a distraction to other children. The parents were called and told to pull Mayank out of the school. The parents however were determined. They took me to the school to meet the principal and teachers.

The moment I walked in, the teachers started complaining one after the other. After hearing them out patiently, I told them that I had worse eyesight than Mayank and had in spite of it completed my postgraduation in Operations Research from St. Stephen's College, Delhi. I asked them as to what they did with other children who did not do their homework. They said that they punished them. But Mayank was getting away without being pulled up, since the teachers felt uncomfortable punishing a vision impaired child. I suggested to them that Mayank is a student of their school and should be treated on par with other children. He should be taken to task if he did not complete his work.

Mayank's only problem is that he cannot read from the board and that he took a long time to write. The teachers promised to try and be strict. A few months later when I visited the school, the teachers were all smiles. They all said that once they had begun insisting on Mayank completing work, he came around. He realized that he was one among the class and that he was expected to perform, else he would be pulled up.

Children very often try to exploit their disability to shirk responsibility and work. Teachers and parents have to be strict. There has to be expectations, discipline and responsibility. Mayank, today is in grade 5. In the past couple of exams he has been getting over 80 percent marks. He is enjoying school. He has plenty of friends and is proud of his performance.

Learning Material

As visually impaired students are included in the mainstream education system, textbooks and other learning materials need to be made available in accessible formats. The material could be in

the form of Braille transcriptions, large print, and audiotapes, e-text and in the form of 3-D models, and embossed presentations. This learning material can presently be obtained from various special schools and organizations working with the visually impaired. The National Institute for the Visually Handicapped (NIVH), NAB and all its branches, and the All India Confederation of the Blind (AICB), are the premier organizations from where some of the material could be obtained. However, it is recommended that the nodal agencies like NCERT be made responsible for the production and availability of learning material for visually impaired children.

Special educators and the classteachers can work together and prepare various innovative learning materials to impart education to visually impaired children. Braille books, tactile diagrams, 3-D models, audiocassettes, large print books, high contrast charts, and raised maps prove to be excellent in this regard.

> When I was in school, my classmates used to read out to me. They also did a lot of combined studies, which was very helpful, not only to me, but also to them. Often, discussions facilitated a better understanding. My classmates provided me with their notes, they read out from the black board. Classmates were indeed a great support and resource.

Children with low vision would have to use notebooks with bold and high contrast lines for the various writing work and bold squares for arithmetic work. They would also use reading stands, table lamps, and optical aids like magnifiers. The child with low vision would prefer to use a felt pen or a marker instead of pencils and pens for better contrast. Light should ideally fall on the work area from over the shoulder of the preferred hand. Proper lighting, adequate magnification and high contrasts are the principals on which low vision interventions are based.

In senior classes, the classmates too can be used as a resource. They could help by recording books, transcribing books into Braille, keying-in books in the computer and taking out printouts in large fonts or create books as e-text, read aloud, and engage in combined studies.

> Government schemes of assistance in the form of IEDC Scheme of Ministry of Human Resource and Development and ADIP Scheme of Ministry of Social Justice and Empowerment can be utilized to provide the necessary aids to blind students. Most of the requirements can be met within the said schemes.

Aids and Appliances

A visually impaired child needs various aids and appliances to handle day-to-day activities in the school. Braille slate, abacus, geometry kit, tape recorder and Taylor frame are essential aids and appliances that a totally blind child needs. Children with partial or low vision would need various low vision aids like telescopes, magnifying glasses, reading stands, table lamps, sketch pens, bold line notebooks, etc.

Besides the essential appliances, the visually impaired student may also need a Brailler, computers with scanners, screen reading, and magnification software and typewriters to facilitate independence to the visually impaired child. Special programs should be designed to provide necessary training in the use of equipment.

Examinations and Tests

Like any other child visually impaired students should be subjected to evaluation through regular examination system and teacher defined tests. Examinations upto grade 5 may be taken by totally blind children in Braille script and transcribed into print for the necessary evaluation. The child is provided with extra time. Beyond grade 5, the blind students may attempt their examination with the help of scribe or typewriter or on a computer. In the case of children with low vision, extra time could be provided. Some children might need the help of readers and scribes. However, in senior classes, the child could be allowed to use a computer.

It is recommended that the policymakers take a hard look at the present evaluation processes followed in the country. It is not really a test of skills and ability; it has simply become a competition of the children's capacity to cram. Further, the format for examinations should be more inclusive and the dependence on elements like readers, and scribes should be eliminated. The visually impaired child should be able to handle examinations with dignity and confidence. Computers seem like a viable option. Question papers as e-text and answer papers in e-text submitted on a CD are other options.

Technologies

Over the past 10 years or so, science and technology has made a significant contribution in the area of assistive devices. Screen reading software like Jaws, Windows Eyes; and other magnification software has made it possible for persons with visual impairment to work comfortably with computers. Such software allows the child to independently read whatever is on the screen, be it menus, dialogue boxes, text, commands, etc. Besides, software like Open Book and Kurzweil help visually impaired children scan books onto computers, convert the files into electronic text and read, edit, etc. These software help the children access printed material like textbooks and libraries.

Today these technologies are expensive and beyond the reach of most parents. The government could easily step-in and ensure that every school acquires such software, so that the visually impaired children could go through school with least dependence on others.

Counseling

Counseling to parents forms an important component of inclusive education. Disability is not a punishment, it embodies a challenge. It is not the reflection of sins but just a probability of chance. Parents need to concentrate and focus on what the child has rather what she/he does not. Parents are made aware of the possible opportunities for their children. Parents would need to understand

that by investing their time now to make the child independent would earn them more independence for themselves at a later point when they are older and less resilient to demands. It often helps to encourage parents to talk about their fears and apprehensions of the future—not only those concerning the child but also of themselves. This talking is cathartic, enabling an objective analysis of the situation as it is. It helps the person move on to other goals after resolving the problems envisaged today.

Access

While designing an inclusive school, there are a few points that need to be borne in mind with regards the school being totally accessible to the visually impaired children.

- Try and avoid too many levels.
- Tactile markings at the top and bottom of stairs helps define the beginning and ending of stairs.
- Use of contrasting colors on stairs to help children with low vision.
- All staircases must have railings.
- All sudden drops in level where there are no stairs must be barricaded with railings.
- Lighting must be bright and uniform right through the school, be it classrooms, offices, corridors, toilets, canteen, library, laboratories, or lobbies.
- Tactile markings at the entrance of every room.
- Room numbers and name plates in large size, in contrasting colors and raised letters. The totally blind child can feel and low vision child can easily see.
- Windows and doors be designed in a way that it totally shuts out glare and shadows.
- All parts of the school must be laid out avoiding clutter, with enough free space for children to move about with ease and freedom.
- Use of slopes and ramps are recommended in auditoria, playing fields, and gardens instead of steps.
- Undulated pathways should be avoided.
- Potentially dangerous areas like swimming pools must be cordoned off.
- School libraries must be equipped with computers, scanners, and screen reading software to help visually impaired children independently access any book or publication of their choice.

The idea is that children using their residual vision or the sense of touch should be able to handle their movements about the school independently with confidence and dignity.

Impact

Inclusion brings added dimensions to the persona of the visually impaired person. It helps the person become:

- Intellectually more alert, confident, competitive, and ambitious.
- Better equipped with communication and social skills.
- Greater awareness and higher levels of motivation.
- Better equipped to interact socially with the opposite gender.
- More positive in thinking and opinions.
- Better grooming.
- Greater levels of fitness, posture, and mobility.
- Higher success levels.

These observations have been made on the basis of interactions with a large number of visually impaired persons from different parts of the country over the past 12 years.

FACT SHEET 1

Common Indicators of Vision Impairment in Children

From Birth to 3 Months of Age

- Does not follow objects in the visual field.
- Does not play with hands due to lack of visual stimuli.
- No response to light.

From 3 to 6 Months of Age

- Does not reach for toys.
- No eye contact while being fed or cuddled.
- Does not visually inspect objects while holding them.

From 6 to 9 Months of Age

- Motor skills are not developed.
- Does not appear to discriminate between similar objects or people.
- Does not pick up small objects successfully.

From 9 to 12 Months of Age

- Shuts or covers one eye when focusing.
- Holds playthings very close to eyes.
- Bumps into large objects while crawling.
- Rubs eyes excessively.
- Does not attempt to grasp spoon or cup while being fed.
- Does not appear to notice interesting or bright colored objects at close distances.
- Does not imitate simple motor activities such as waving.

For Children in the Age Group of 1–2 Years

- Walking is delayed.
- Bumps into large objects.
- Not interested in playing.
- Not interested in pictures, books, and colored objects.
- Holds objects very close or far from eyes to see them.
- Appears to be afraid to walk or move in strange environment.
- Clumsy or awkward in doing things.

From 2 to 5 Years of Age

- Stumbles over small objects.
- Bumps into large objects.
- Not interested in games involving catching and bouncing of ball.
- Complaints of headache, nausea, dizziness, burning or itching of eyes.
- Complaints of blurring vision.
- Does not notice color differences.

From 5 Years and above

- Body rigid while looking at distant or near objects.
- Tentative gait.
- Short attention span.
- Appears to be disinterested.
- Poor hand-writing and writes thick and dark.
- Struggles while reading.
- Difficulty in identifying and reproducing basic geometric forms.
- Poor eye hand coordination.
- Difficulty in negotiating stairs.
- Difficulty in getting along with children and tends to withdraw.

FACT SHEET 2

Understanding Terminologies

Blindness is often mistaken to be total loss of sight with a sense of complete darkness for a blind person or child. On the contrary, blindness or visual impairment refers to a condition where an individual has poor visual acuity even after necessary medical intervention and corrective glasses. Broadly, visually impaired children can be divided into three groups:

1. A totally blind person is one who has absolutely no sight, no perception of light or for that matter darkness.
2. A partially blind person is one who has a visual acuity that is less than 6/60 in the better eye after correction or has a visual field that is less than 20 degrees in the better eye.
3. A low vision person is one who has vision that is less than 6/18 in the better eye after the best possible correction.

Persons who are totally blind and partially blind are both recognized as legally blind by both the Government of India and the PWD Act of 1995.

Visual Acuity is the measure of the eye to identify objects. It is measured by using specially devised charts. The charts are calculated based upon the assumption that the individual is seated 6 meter away from the chart. The top number (numerator) refers to the distance of the chart from the patient: the bottom number (denominator) refers to the distance a normal person should read the chart. If your distance vision is recorded as 6/60, it means that a person with 6/6 vision can see the same set of letters at 60 meter.

Field of vision refers to the peripheral vision. It is a measure of the extent to which a person can see sideways while looking straight ahead.

FACT SHEET 3

Understanding Low Vision

Low vision can be defined as a condition where a person has insufficient vision to perform a particular activity or set of activities despite wearing spectacles or contact lenses.

Definition

Low vision implies visual acuity of 6/18 or less in the better eye after the best possible correction, which means that a person can still read print, with or without the use of visual aids.

The legal definition of blindness as recorded in the Persons with Disability (PWD) Act, 1995 is central visual acuity of 6/60 or less in the better eye with best possible correction, or a field defect in which the widest diameter of the visual field subtends at angular distance no greater than 20 degrees.

Evaluation of low vision patients may require special testing lenses and equipment not always available in the offices of doctors who are not specializing in low-vision care. Centers for more complete evaluation of low vision are available with various organizations working with the blind and eye hospitals in India. The LV Prasad Eye Institute (Hyderabad), Shankar Netralaya (Chennai), Sharp Memorial School (Dehradun), NAB India (Mumbai), Venu Eye Institute (New Delhi), Shroff's Charity Eye Hospital (New Delhi), are leading organizations in India with reasonably well-equipped low vision facilities.

There are other factors, such as glare and contrast, which might affect vision. Glare may reduce vision considerably in the presence of some types of corneal disease and cataracts. New methods of testing vision are being evaluated, in order to better relate visual acuity and visual functioning. A person may often be helped by the use of low vision aids if:

- He/she has accepted the fact that he/she has low vision.
- He/she has some useful visual field or some useful central vision.
- He/she has a strong enough desire to see better and thus to use visual aids.

Prior to embarking on a low vision program, the medical condition which has caused the problem should receive attention. In addition, an examination to maximize the use of prescription glasses is encouraged.

Low Vision Aids

There are three basic types of low vision aids:

1. Optical aids which magnify images include hand or stand magnifiers (both illuminated and nonilluminated) spectacles, clip-on loupes, absorptive lenses, head borne aids, telescopes and caps for telescopes or adjustable telescopes.
2. Nonoptical aids and approach magnification include control of illumination and contrast or bringing things closer, such as sitting close to the TV, sitting in the front row of school, as well as special lamps, reading and typing stands, filters, pin holes, tints, large print, visors, side shields, typoscopes, check, and handwriting guides.
3. Electronic aids, which magnify and control illumination such as closed circuit televisions (video magnifiers) and scanners.

There are several types of magnification.

1. Relative size magnification in which the object is made larger (large print or closed circuit televisions—read/write machines) and magnifiers.

2. Relative distance magnification which makes an object appear larger by moving closer to the object, actually bringing the print closer to the person's eyes (also known as approach magnification).
3. Angular or optical magnification, in which the object is made to appear larger by passing its image through a lens (magnifier).

With the many types of low vision aids available, it is advisable that an examiner evaluate the patient to recommend and demonstrate the most useful aids. Active participation of the patient with careful, continued follow-up of instruction is extremely beneficial.

People who are legally blind may also have some residual vision. It is recommended that such individuals too visit a low vision specialist and explore the possibility of using this residual vision optimally.

Believe Me!

Visually impaired from early childhood, studied in an inclusive set up, graduated in Mathematics from St. Stephen's College, did postgraduation from Delhi University, worked as an advertising professional with two of the largest advertising agencies for over nine years, organized two World Cups, was honored to run with the Olympic Torch at Atlanta and had the privilege of being part of the elite Discovery channel series called Discovery People—a reasonable success story, don't you think?

It is conjectured that my eye problem was caused by an illness I had when I was 10 months old. But the poor eye condition was first really noticed when I began going to school. The teachers were the first to point out the impairment, since they found me struggling with my reading and written work. I would hold the paper very close to the face. I guess that the condition was not noticed earlier since I had some residual vision which allowed me to get on with my routine day-to-day activities.

The doctors took a good look at my eyes and pronounced that the condition was irreversible and that it might get worse with time. One of the doctors also suggested that I be admitted into a blind school as soon as possible. My parents were however determined to keep me in the same school. They had made up their mind that they would cross the bridge when it actually arrived.

I must consider myself extremely lucky and blessed to have had parents who were very loving and positive. They invested a great deal of time in me ensuring that:

1. I kept pace with the goings on in class;
2. My talents and abilities were nourished and nurtured;
3. I evolved into a well-rounded person with wide ranging interests.

They would read to me, they would spend a great deal of time with my teachers. My mother introduced me to athletics and music; my father introduced me to literature, recitation, debates, and theatre. When I won my first prize in grade 5 for a speech I had made on Mahatma Gandhi, it was celebration time at home.

(Contd. on next page)

The teachers too were very helpful and accommodating. They would make out an extra copy of their notes especially for me. They would speak aloud whatever they wrote on the board. They also encouraged the child sitting next to me to help me with the reading from the board.

My classmates also were very positive and supportive. They would often come home for combined studies. They would read to me and then we would discuss. This method of learning proved to be beneficial for all of us. Often it was I who understood the lesson first and would explain to the rest.

All seemed to be getting on smoothly till I reached grade 9. This was the time we had to choose whether we wanted to do science or arts. I was very keen on Maths and hence had to opt for Physics, Chemistry, and Maths. The teachers told me that I would find it extremely difficult to cope with Physics and Chemistry, particularly when it came to the practicals and drawings. I did not really mind loosing out on Physics and Chemistry, but I just could not compromise on Maths. I must give full credit to the principal of the school. He offered me a special combination of History, Economics, and Maths. Life began to roll along once again.

I was a great lover of cricket. I was introduced to the game in 1969 when the Australian team under Bill Laurie visited India. I was fascinated by the sport and began playing the game. Of course, I could not bat since I could not see the ball. However I started developing as a fast bowler inspired by the likes of Dennis Lillee and Jeff Thompson. My strong desire at that time was to play for India as a fast bowler. I was quite quick and the boys were not very comfortable facing me, since I made the ball bounce awkwardly to their chin. Captains preferred to have me on their side rather than face me. It was indeed fun. I was a key member of the class cricket team and did have quite a few memorable performances to my credit.

In grade 9, I emerged as the fastest 100 meter runner in the school. I won quite a few prizes as a sprinter. I also had the opportunity of participating in a number of state and zonal level athletic meets. I loved speed and enjoyed having the cold wind blow onto my face. I went out with my friends for morning workouts every day during the athletic season and sometimes practiced for four to five hours a day.

In grade 10, I was declared as the best all-round student of the school and in grade 11, I was elected as the school head boy. At that time, they were indeed the best moments of my life. They were great moments for my parents too.

Today as I look back and reflect on my school days, I have strong reasons to believe that children with vision impairments could easily be included in the mainstream of education. What is really required is a "wee bit of will," a little bit of common sense application and a bit of innovation.

Source: George Abraham.

8

ORTHOPEDIC IMPAIRMENT

Anjlee Agarwal

Opening doors for people with disabilities to mainstream programs helps build a society, that is inclusive of everyone and not just a few. Opening the doors of schools makes this happen.

In asking questions about how design affects the lives of students with special needs, we also must examine how the wider body of "normal" students is also influenced by the design of school buildings and grounds. Beyond the more familiar issues of lighting, circulation, and ventilation, there are questions about how to foster small group-play, combat bullying in schools, create spaces for reflection and privacy, and enable students to feel a sense of ownership over the school within which they spend the bulk of their time.

The types of disability determine the various measures to be adopted to create an accessible environment for students with disabilities. They may:

- Require the use of wheelchairs.
- Have difficulty in walking or require the use of braces, crutches, walking frame or other means of support.
- Have total or partial impairment of hearing or sight.
- Have poor or limited coordination of movement.
- Have a weak grip.

The minimum and maximum dimensions for space in the built environment should therefore take into consideration the needs and conditions listed above. The following criteria also should be considered:

- Varying heights of students, the range of reach and vision in both standing and sitting positions.
- Data on the dimensions of assistive devices such as wheelchairs, the range of distance of crutches and other mobility devices.

The Elements of Design

Primarily, the requirements of students with disabilities should be given the same attention and priority as fire regulations, structural standards, and environmental control systems.

The following design elements needs to be considered when creating a barrier-free environment.

Entrances to Buildings

Directional/tactile map

- A layout map of the building (in bold and contrasting colors) including all the offices and rooms must be placed near the entrance for the benefit of the visitors.
- Reception must be marked with a directional arrow sign.

Parking

Designated parking spaces for dropping off disabled students should be located as close as possible to main entrances to/exits from buildings (see Figure 8.1).

- Overall minimum dimension of the space being 3.6–4.8 m.
- The parking should have the international signage painted on the ground and also on a signpost/board put near it.
- There needs to be directional signs guiding people to the accessible parking.
- It should be within 30 m of the accessible entrance.

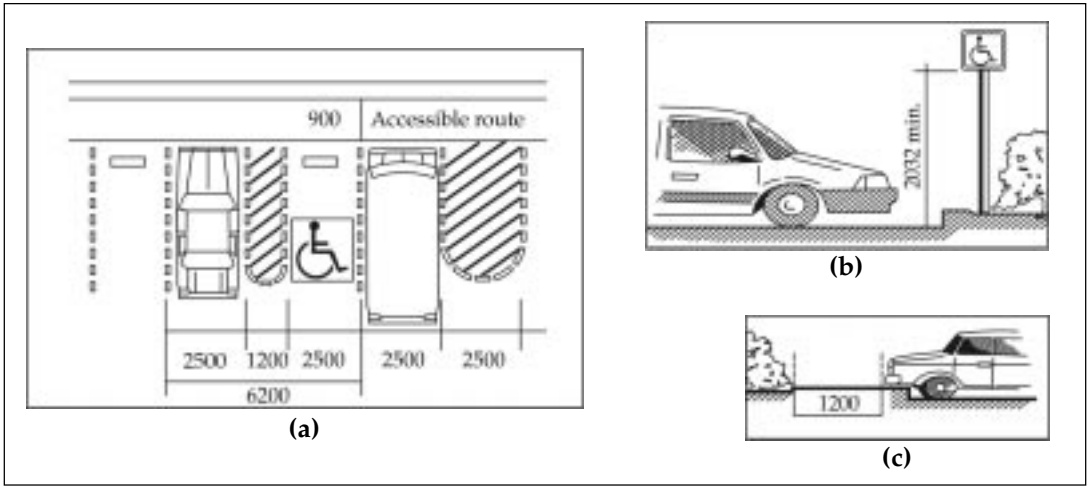


Figure 8.1 (in mm)

Doors and thresholds

- The width of the accessible entrance door should not be less than 90 cm, which is wide enough to pass a wheelchair and a person using crutches also.
- All *thresholds* should to be embedded in the ground be it of iron gates, collapsible grill gates or any other, as there are chances of tripping over of children, low vision and visually impaired students, and it causes obstruction for wheelchairs also (see Figure 8.2).

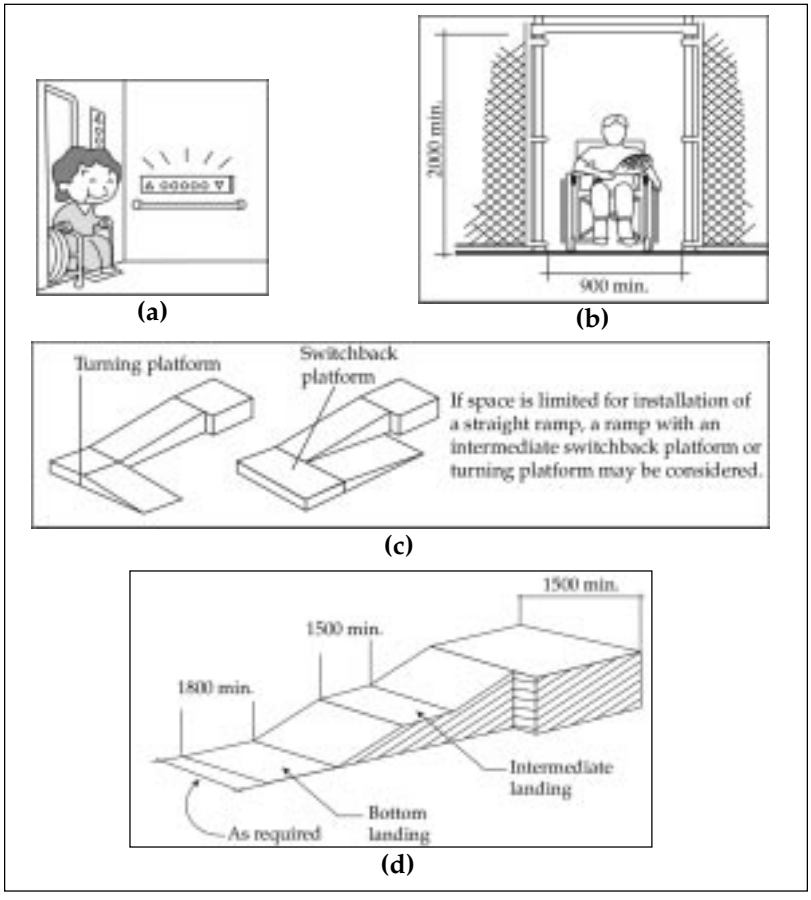


Figure 8.2 (in mm)

Ramps

- Maximum gradient: 1:12.
- Maximum rise in single run: 75 cm.
- Minimum clear width: 120 cm.

Ramp with landing

A landing at least 1.5 m long is required after every 10 m.

- A ramp suitable for wheelchair users and people with other mobility impairments should be no steeper than 1:12, otherwise it is difficult to move the wheelchair or walk up/down.
- It is also important to remember that it is better to provide sustainable, maintenance free, and cost-effective access provisions—for example, a concrete ramp instead of wooden ramps that last long and would require less maintenance.

A Municipal Corporation of Delhi (MCD) school had provided a ramp in its primary section. However this very ramp was so steep that the child, Chandra Mohan who wears calipers in his polio stricken leg could not use the ramp. So, as a result every morning either his parents or the schoolteachers would have to support him to get up or down the ramp. This led Chandra Mohan to feel very frustrated as his mobility even with his calipers that he so proudly used did not make him independent.

Staircases and steps

A flight of stairs

- Should have uniform risers and goings.
- Be of gentle gradient.
- Should have no open risers.
- Nosing of stairs should project as little as possible and be in bright contrasting colors.
- Rise of a flight between landings should be of an appropriate height.
- Intermediate landing should have a width and depth of at least the width of the flight.
- Stairs should be adequately illuminated.

Handrails

- Should be at the height of 80–90 cm from the ground.
- Should be continuous on both sides even at the landing.
- Should extend a minimum of 30 cm at the beginning and at the end of stairs.
- Should be grouted into the ground.
- Warning blocks may be placed 30 cm at the beginning and at the end of stairs (see Figure 8.3).

Door accessories

The Figure 8.4 shows main door accessories. Among other accessories are signage, nameplates, and numbers. These should be in Braille and raised alphabets at the eye level on the wall and in bold and contrasting colors. It is also recommended to provide

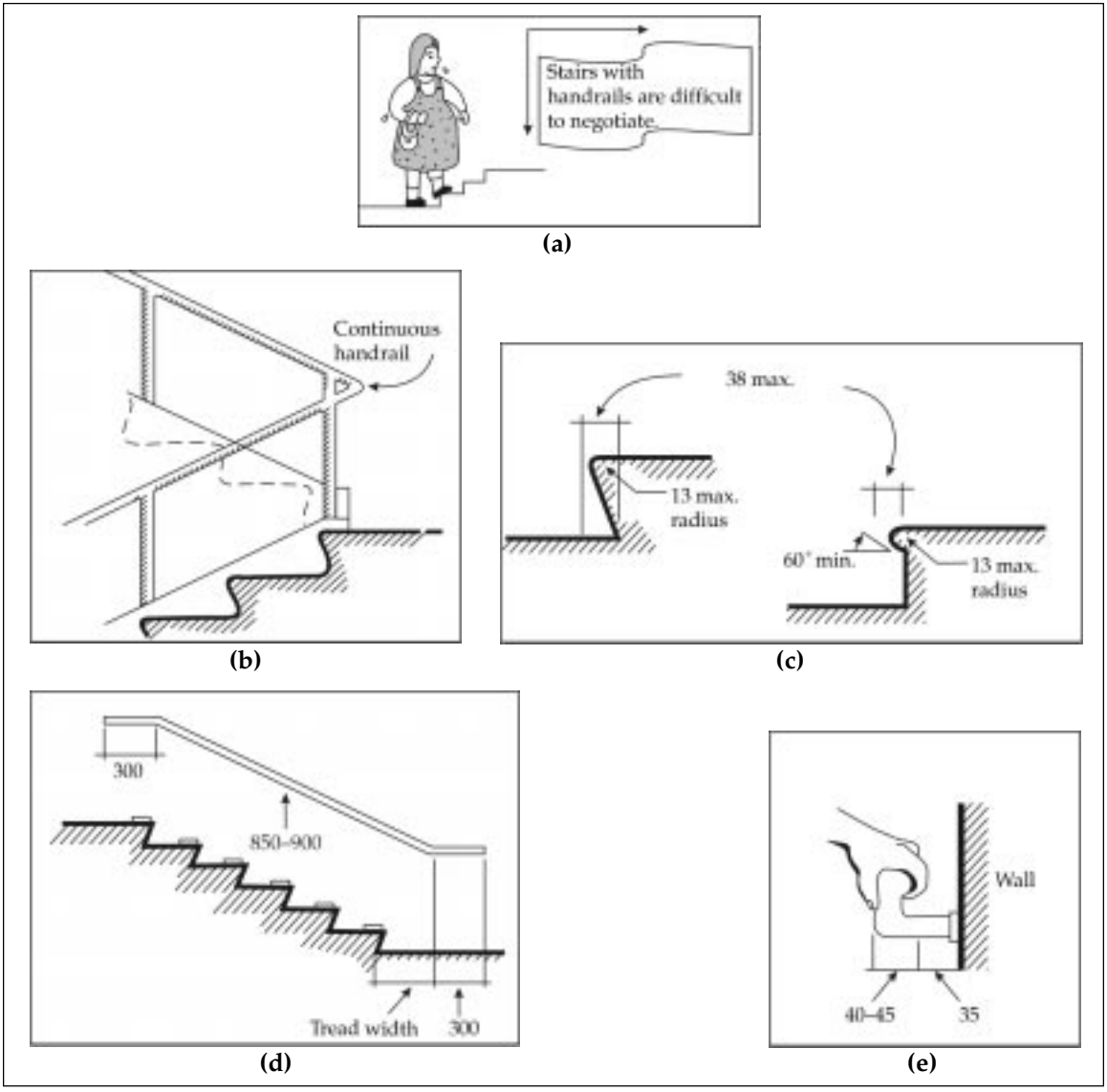


Figure 8.3 (in mm)

- Foot mats—either recessed in the ground or rubber mats, for visually impaired students to detect the entrance of the rooms.
- Kick plates, 30 cm of height (in aluminum preferably) may be provided for wheelchair users, outside the doors.

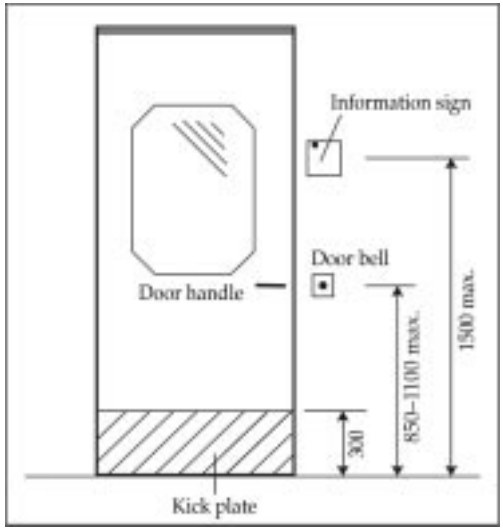


Figure 8.4 (in mm)

- Door latch to be lever type and door handle on both sides of all doors to be D shape loop-type, which can be opened with minimum of force, without grasping, pinching or twisting.

Signage

International access symbol: This signage to be provided for all the accessible features provided. To be painted in blue color on white background (see Figure 8.5).

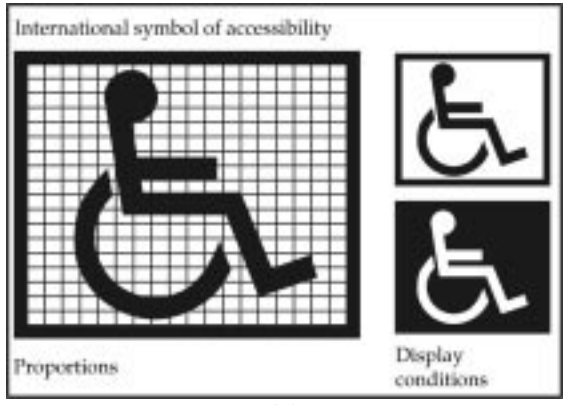
- Standardization of height of signage
- Large print
- Standardization of text/symbols

Switches

To be within the reach of wheelchair users, switchboards can be outlined in contrasting color (preferably yellow) for low vision students to identify (see Figure 8.6).

Guiding and warning blocks for vision impairment

- Dot-type blocks give a warning signal. They are used to screen off obstacles, drop-offs or other hazards, to dis-courage movement in an incorrect direction, and to warn of a corner or junction.
- Line-type blocks indicate the correct route to follow (see Figure 8.7).



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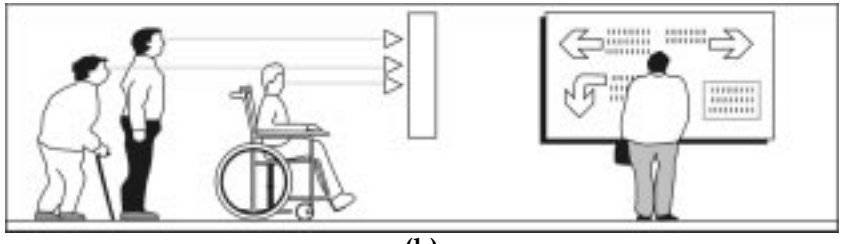

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Figure 8.5

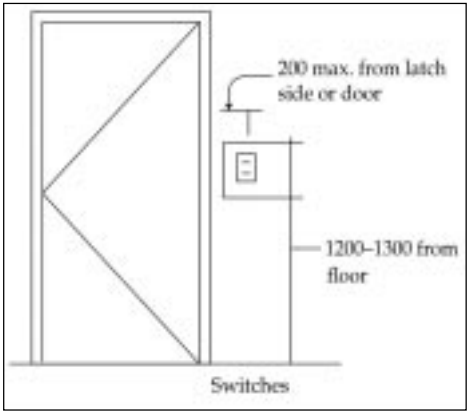


Figure 8.6 (in mm)

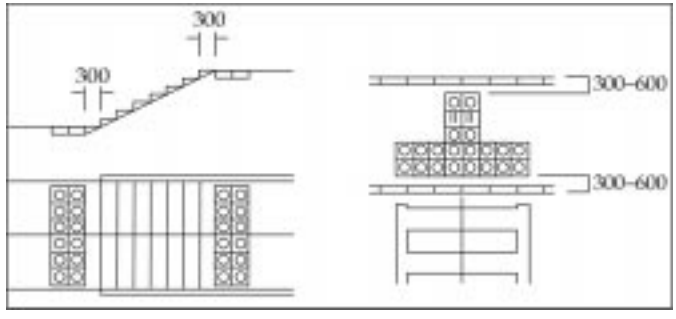


Figure 8.7 (in mm)

Warning blocks to be installed

- In front of an entrance/exit to and from a staircase, ramp or multilevel crossing facility (30 cm before and after).
- In front of toilets.

Accessible Toilet

Most schools do not provide the facility of the Western seat (WC). However, it is important to have an accessible toilet cubicle with WC for disabled students and senior (aged) staff.

- Provide a door of clear opening of at least 900 mm with the door swing outwards or of the folding or sliding type.
- This toilet may be provided with an emergency switch that activates an alarm.
- Locks to toilet doors should be of type that can be opened from outside in case of emergency.
- A minimum of one toilet compartment for public use should have enough floor space for wheelchair users to enter, turnaround, and exit (see Figure 8.8).

A wheelchair user student, Mahesh avoided food and liquid intake, even plain water during school hours, because there was no WC toilet in the school. How difficult it must be for him to resist thirst especially in summer!

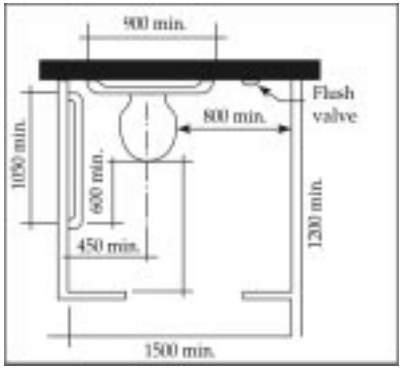
Remarks

- Provision of one accessible toilet in the whole school building will not only assist a disabled child but also elderly school faculty members.
- Usage by the teachers and other staff will result in the maintenance of cleanliness of WC toilets.

Water closet

At least 48 cm from the centerline of the WC to the adjacent wall and have a clear dimension of 75 cm from the edge of the WC to the rear wall to facilitate side transfer.

- The top of the WC to be 48–50 cm from the floor.
- Have a back support, which reduces the chance of imbalance or injury caused by leaning against exposed valves or pipes.
- Grab bars at the rear and the adjacent wall.
- On the transfer side swing away/up grab bars may be provided.



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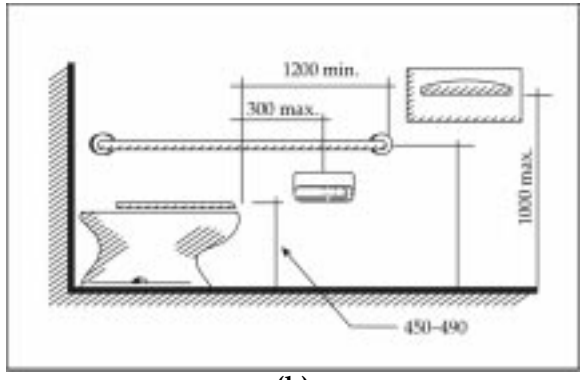

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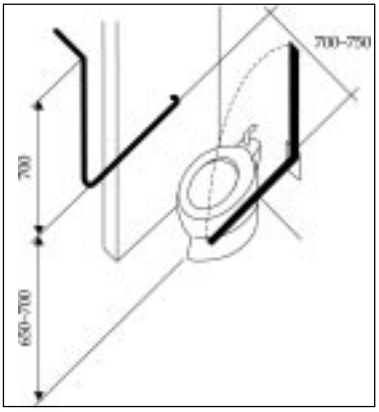

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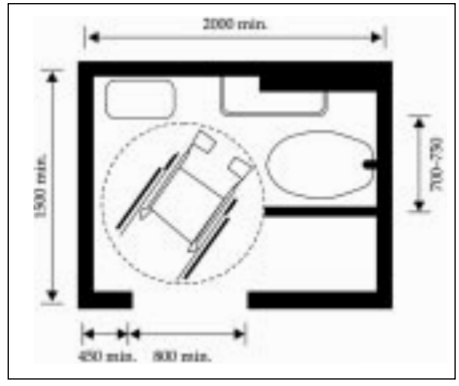

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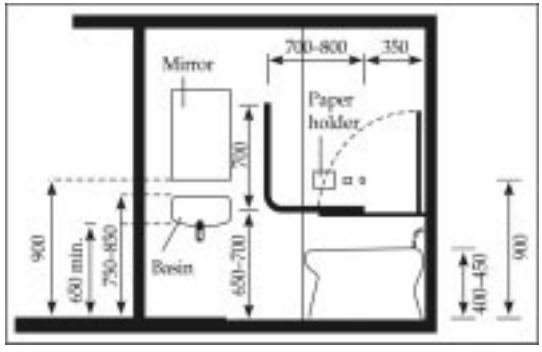

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Figure 8.8 (in mm)

Washbasin

- Should be mounted such that the top edge is between 80 cm and 84 cm from the floor; have a knee space of at least 75 cm wide, 20 cm deep, and 60 cm high (see Figure 8.9).
- Be equipped with a cloth/towel hook mounted on the side wall not more than 1.3 m from the floor.
- Mirror's bottom edge to be at a maximum of 1 m.

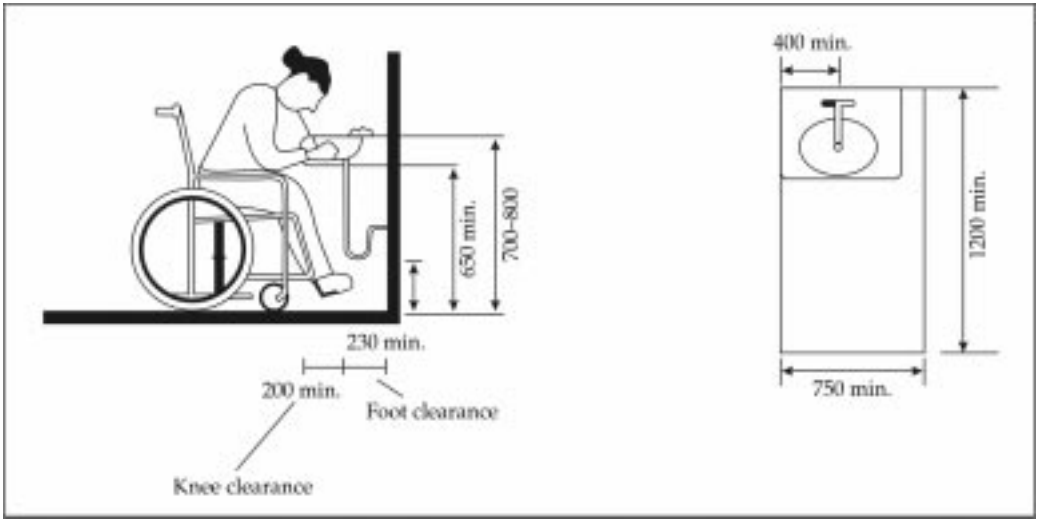


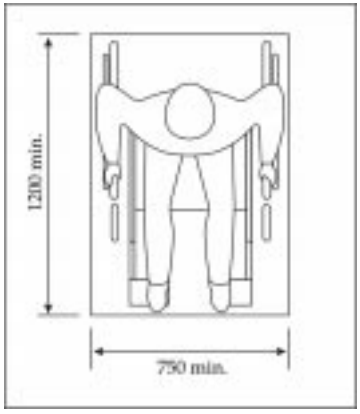
Figure 8.9 (in mm)

Classroom accessibility (including libraries, labs, etc.)

- Adequate space should be allocated for students using mobility devices, e.g., wheelchairs, crutches, and walkers, as well as those walking with the assistance of other students (see Figures 8.10[a], [b], and [c]).
- The range of reach (forward and side; with or without obstruction) of a person in a wheelchair should be taken into consideration (see Figures 8.10[d], [e], [f], and [g]).
- Attention should be given to dimensions of wheelchairs used locally.

Sitting arrangement

Sitting arrangement around the table should be such as to allow easy access in the classrooms and libraries and should provide legs pace under the table (see Figure 8.11).



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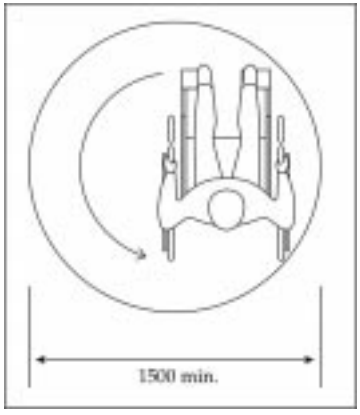

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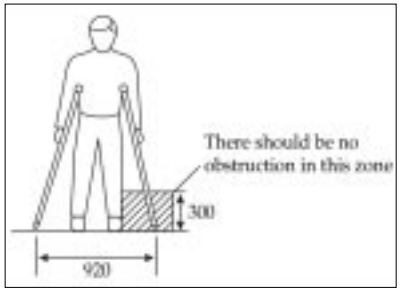

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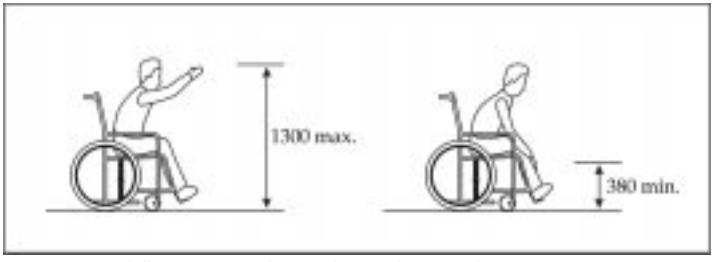
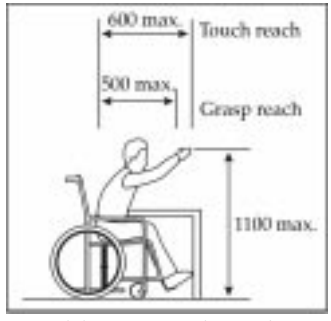
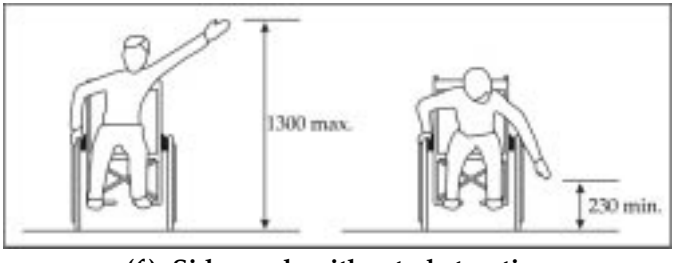


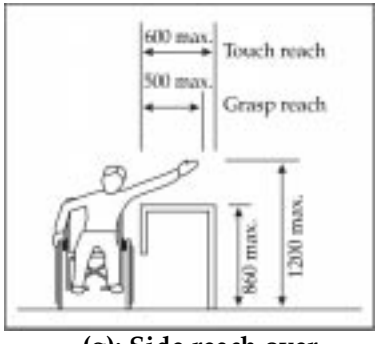
(d): Forward reach without obstruction



(e): Forward reach over obstruction



(f): Side reach without obstruction



(g): Side reach over obstruction

Figure 8.10 (in mm)

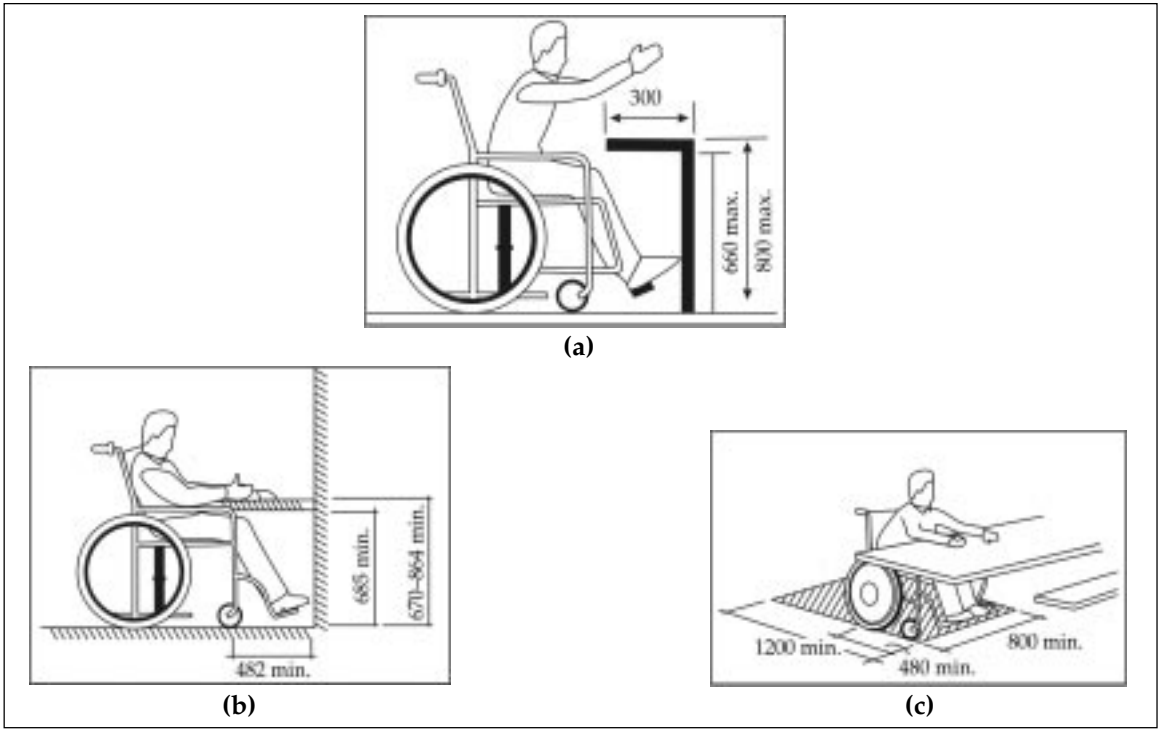


Figure 8.11 (in mm)

Writing table

- Writing surfaces and public dealing counters should not be more than 80 cm from the floor.
- Alternatively, at least a part of the counter height (fees/forms deposit etc.) to be lowered to 80 cm.

Some Important Points to Remember

Basic principles

- The orthopedically impaired student has the same entitlement as his peers to all facilities offered by the school.
- It is the responsibility of the principal to ensure the safety of the orthopedically motor impaired student in and around the school.
- Students with limited mobility need to be regularly reviewed. Their needs frequently change over time, as in the case of deteriorating conditions, or when students require surgery and are

off their feet as a consequence. Similarly the demands placed upon the student may change. For instance when a student's class is situated upstairs or in an outside classroom.

Mobility

An access survey should be undertaken on the whole of the school site, inside and out. Among other things always look at (see Figure 8.12):

- Playground: What is the uality of the surface, is it on a slope, are benches provided?
- Entrances: Are there steps/ramps? Are the doors wide enough to accommodate wheelchairs/ walking frames?
- Access to toilets.

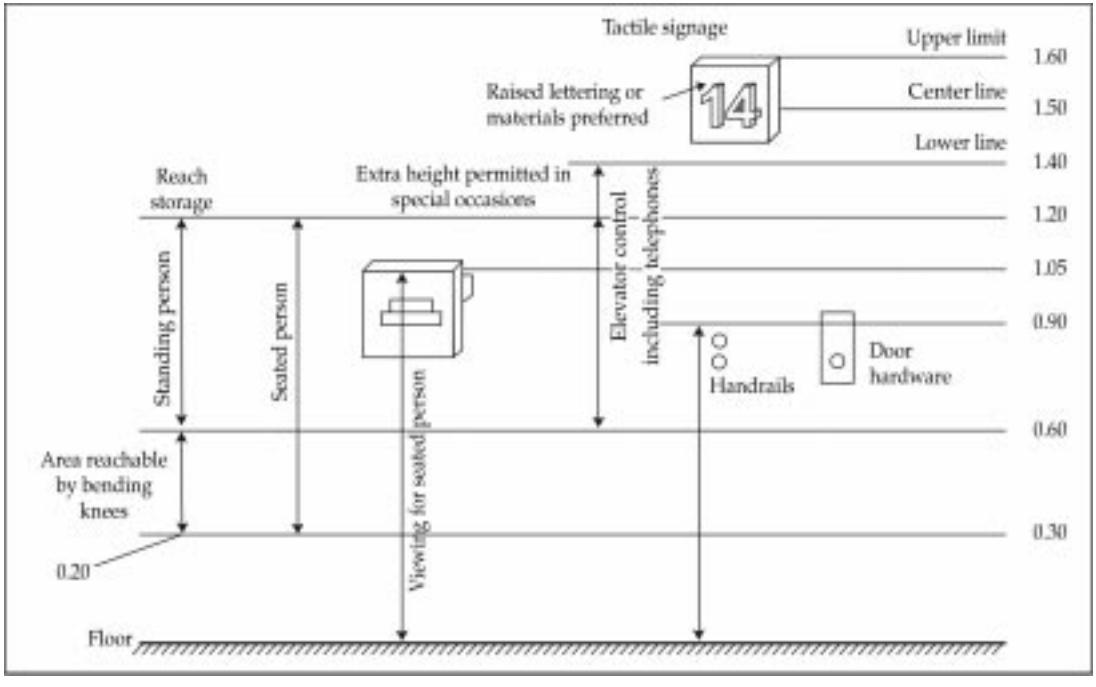


Figure 8.12

Safety on the stairs:

- Can the student negotiate the stairs safely?
- Does the student need supervision on the stairs? Is there a member of staff who could accompany the student?

- Would it help if the student used the stairs before/after the rest of the class?
- Would the provision of handrails improve safety?
- If the student is in a wheelchair, would a stair lift help?
- Is it possible to locate the child's classroom on the ground floor?

General mobility around the school, particularly at busy times when the whole school is on the move.

- Does the student need to move around the school before/after the rest of the school to avoid the rush?
- Does the student take a long time to get about? What are the implications of this?
- Does the student have access to all parts of the school? Library, TV room, dining hall, etc.?
- How will the student with limited mobility evacuate the building in the event of a fire? Who is responsible for ensuring the child gets out quickly? Classteacher or any other named adult?

Physical education and games

- What are the implications of the student's physical condition for involvement in this area of the curriculum?
- You may wish to seek the advice of the outreach service and the student's physiotherapist if appropriate to discuss this further.
- Does the student have difficulties in dressing and undressing? Do these difficulties require adult assistance and/or allowance of extra time?

Swimming

- How will the student get to the pool?
- Will she/he need support/special teaching techniques once in the water?
- Will the student require extra help/time for dressing?

Self help and independence

Toilet management:

- Does the student have special requirements? e.g., private changing facilities?
- Assistance to manage catheterization?
- Do the toilets need adaptations/ramps/handrails, adapted taps on basins?

Lunchtimes:

- What sort of assistance is required?
- Will the student require extra time?
- Will the student require support during play time?

Other considerations

- What is the educational provision for the student at secondary level?
- Does the student have associated fine motor difficulties which necessitate an alternative to facilitate recording skills?
- Does the student have any associated learning difficulties which require additional support?

How I Started Enjoying School

I realized my disability only after the age of 10 years. The elders and the teachers looked at me with scorn. When I asked them about my disability, they said it was a curse from God. My child-like mind believed this.

In my early school years I attended the local village school. But when I saw my friends run free without aids made my yearning to feel the wind on my face too! But remembering that it was a curse of God I had to be quiet.

In class too I used to remain aloof, not mixing with others, as other children also never wanted to be friends with me or sit with me. But I was lucky as my family members understood the cause of my inferiority complex and decided to put me in some well-known school at Patna, to keep me away from that atmosphere. This complex was so deep that I was not able to come out of it even in my new school. But one incident in school changed my entire personality.

I was in grade 7. At that time as there was no place to sit in the last row of the grade 1 had to sit in the front row, other children who were sitting here from the beginning asked me to sit elsewhere. I thought it was because I was disabled. I was deeply hurt and wept a lot. But my teacher, who was good and kind, called me and spoke to me with a lot of affection, explaining that such a situation could happen to anyone. She also said "If you feel and wish that all these children should be your friends then you much change your thinking. Be positive, reach out to them. Do not have a negative approach." His words changed me. I started working hard and got a first rank in my class. Now things began to change. Boys who had refused to be my friends now wanted to sit with me in the class and wished to be my friends. I faced lots of difficulties even after this but never lost hope. I continued to work hard and was always successful.

I got 87 percent marks in the Intermediate exam. I got a distinction in all subjects. Today I am a journalist working for a popular national newspaper.

Source: Vijay Kumar Jha.

9

LEARNING DISABILITY

Mallika Ganapathy and Lakshmi Krishnakumar

Kareena is a middle school student. She transferred to a school in the city when her father, a high rank army officer was posted at the headquarters. The small army base school she was studying in earlier, provided her with ample opportunity to learn and complete her assignments at her own pace. This did not mean that she was exempted for the drudgery of homework or tests and examinations—what it did mean was the teachers allowed her to complete her work "as soon as possible." Kareena's parents knew of her learning disability. They had her diagnosed when she was 8 years old and doing poorly in her studies, on the advice of the well informed principal of the local primary school she was attending at that time. This information they kept to themselves over the years, not revealing it to either the teachers or the administrators of any of the schools Kareena attended thereafter. Being in the defense services, it was not difficult for her father to get Kareena admitted to the school of his choice in the places he was posted at.

Both parents monitored Kareena's progress and were well-informed about the facets of learning disability, taking care to regularly read about strategies and techniques on the Internet, as books on the subject were hard to come by. They used this knowledge to help the child cope and keep her spirits up in the face of increasingly complicated difficulties as each year passed and as each new grade was approached.

It was in grade 9 that Kareena's family had to relocate again. She gained admission in a prestigious English medium school that was known for its open attitude. She had to take two language courses, which was a major departure from her earlier academic years. But her father was not too keen on divulging the news about her learning problem to the school and advised Kareena to have a shot at it anyway. Kareena was apprehensive as she had a language-learning disability, which made it difficult for her to assimilate and organize large amounts of verbal information.

Writing was her most challenging academic area. And this made Kareena very worried, wondering if she would be able to keep up with the curricular workload—somehow failing in a subject in the very first exam in the new school did not seem to be a valid option.

So it was with great trepidation that the family as a group contacted the classteacher and shared their concerns. As was the practice in the past, the father made sure that Kareena was present in each of these meetings and that no decision was taken without her knowledge and consent. After this appointment with the classteacher they decided to let Kareena continue with the course work as decided upon earlier, but that she would receive extra help during the "zero" period from the language teacher and could work on the computer to submit written assignments. The computer, an investment from her father's provident fund, was equipped with a speech-to-text option to use during the academic year. With this assistive technology, Kareena could speak into the computer and her speech was translated into text. With this accommodation, Kareena made a remarkable discovery—that her language skills were better than average—provided that she did not have to write, for somehow the task of writing made all her thoughts come across as disorganized or jumbled.

Neurological in origin, LD interferes with a person's ability to store, process or produce information and creates a "gap" between one's ability and performance. Individuals with LD are generally of average or above average intelligence.

- LD can affect one's ability to read, write, speak or compute math, and can impede socialization skills.
- Early diagnosis and appropriate intervention and support are critical for the individual with LD.
- Because it is often a "hidden handicap," LD is not easily recognized, accepted or considered serious.
- LD often runs in families.
- It is believed that LD never goes away, but can be compensated for.
- Attention deficits and hyperactivity are sometimes coupled with LD, but not always.
- LD is not the same as the following handicaps: mental retardation, autism, deafness, blindness, behavioral disorders.

It is thought that upto 15 percent of any population anywhere contains learning disabled/specific learning disabled (LD) persons who find it difficult to succeed in conventional classrooms. Therefore, it stands to reason that all teachers, preschool through university, will have LD students in their classes, unrecognized, undetected and therefore considered to be the "dullards," the backbenchers.

How It Affects the Student

Learning disabilities affect the child from a variety of angles—but mostly, self-esteem and self-confidence. In the very early years the feedback comes from parents, but since learning at this stage is fairly nonstressful, the occasions for failure are few. The situation dramatically changes when the child enters school and encounters other children (who is not a brother, sister or a cousin), competition (in an alien atmosphere), and other adults (who are not parents). It is the latter which have a very

significant and lifelong impact on all students. This involves not only the teaching of particular academic skills, but as importantly, the fostering of student self-esteem, that is, to make them feel that they belong and are welcome in the school setting. This can be done in the classroom by providing them with responsibilities through which they perceive themselves as contributing and making a difference (e.g., distributing books to the students, helping younger children during recess, helping make charts for the class). Offering them opportunities to make choices and decisions and solve problems, communicating encouragement and positive feedback will also help the process. While these kinds of positive interventions are important for all students, they are particularly relevant for students who find learning problematic.

Negative experiences in the school, especially in terms of learning capacity can leave long lasting scars of being demeaned, belittled, or accused of being disruptive as they struggled to understand what was being taught. Children with learning difficulties are especially vulnerable to this type of treatment and unfortunately, even today, continue to hear accusations that they are lazy and unmotivated or that they should pay closer attention so that they would not have to ask so many questions.

Self-esteem strategies do not require financial costs or a budget, but rather the sensitivity, respect, and caring of teachers. In fact, teachers must constantly communicate to students that mistakes are part of the learning process and that no student should ever feel embarrassed to ask questions if they do not understand something.

To minimize student fear of making mistakes and feeling humiliated, teachers in the first or second day of the new school year could ask students, "who feels they will probably make a mistake in class this year or not understand something the first time?" to launch a discussion of how fears of not knowing something and making mistakes interfere with offering opinions and answers, and learning.

To acknowledge openly the fear of failure renders it less powerful and less destructive.

LD is a neurological condition that is beyond the control of the individual. Such a student is more normal than different, and different does not mean defective. There are degrees of LD—mild, moderate, and severe. It might go undiagnosed as late as secondary school, university, or even never at all. The younger the child when diagnosed, greater is the possibility of remediation. When a student is older, it is coping strategies that need to be strengthened.

General Guidelines for Educators

- Students with LD may take much longer to learn and can also tire quickly. They have to try harder, which can be exhausting. Be aware that the pace of the normal class is likely to be too fast because they often need more time to process language. Make a conscious effort not to speak too rapidly.
- Be prepared to learn from the parents. Interest, involve, and work closely with them. Use whatever works—home/school agendas, face-to-face meetings, phone calls or e-mails.

- Ensure that information concerning the student is passed on when the student is in transition from one teacher to another and from one year to another. Do not assume that this will be done automatically.

Suggested Strategies

- Encourage students to be aware of and to evaluate the strategies they use to study and to learn. Study skills, like note taking and time organization, need to be actively taught.
- Provide structure. Lists of the day's routines and expected behaviors can be of great help. Give plenty of warning when changes are made to the timetable, teacher or task.
- Teach how to ask questions. All students, especially the ones with LD, need to feel comfortable with seeking assistance.
- Break activities into small, sequential tasks. Give specific examples.
- Repeat, repeat, repeat—both old and new materials, in different ways.
- Provide the amount of structure and support that the student needs.
- Do not expect the student to listen and write simultaneously.
- Mark positively—tick the good bits. Mark for content—not presentation or mark for presentation and not content.
- Do not use playtime to finish work.
- Reward any and all good behavior.
- Very importantly, seek opportunities to praise and build self-esteem.

Dyslexia

Divya, a 10-year-old, attends a mainstream school. Her teacher feels that she has difficulty in comprehending written passages. She seldom volunteers for reading activities and complains of print blurs while reading. While reading, Divya exhibits low phonetic awareness. Her parents described her as a girl who has trouble in relating clearly a sequence of events, compared to other girls of her own age. Her mother also recalls that Divya was unable to learn nursery rhymes as a child, in spite of exposure to them and efforts to help her learn. Divya has dyslexia.

Dyslexia—a disorder manifested by difficulty in learning to read, despite conventional instruction, adequate intelligence and sociocultural opportunity. It is dependent upon fundamental cognitive disabilities, which are frequently of constitutional origin.

Dyslexia can be confidently diagnosed by the second grade. The most common presentation in children is difficulty in school with a history of delay in speaking, difficulty in learning letters in the kindergarten, and failure to learn to read by first grade. Thereafter, the child progressively falls behind.

Slow and halting deciphering of words with inadequate reading comprehension marks the key characteristic of the reading difficulty. There is frequent omission of words, with a tendency to get lost in a page while reading, inability to skim or scan through reading matter, and a high degree of distractibility while reading. Dysgraphia and dyscalculia is often accompanied. Handwriting is awkward with slow writing speed, poor spelling, and omission of words. Dyslexics have poor word-retrieval and frequently use more fillers ("um," "like," "you know") in their narratives. They experience markedly increased difficulties in the fourth grade when there is a shift from "learning to read" to "reading to learn." Some children whose overall cognitive abilities are high may compensate for their dyslexia and not be identified by the schools because they can maintain average grades. However, they will have persistent difficulties with spelling and written language into adulthood.

Remedial Strategies during Elementary School

Oral reading strategies are a good way to involve students in reading. These strategies help the child to develop good listening skills and are effective when done in small groups with children sitting in a circle facing each other.

Choral reading

Every one in the group reads together at the same time. This is effective when the teacher has to focus on a passage or poem. The teacher reads the passage (slowly and clearly), and the children repeat in unison, pointing to the words.

- Teacher reads the passage leaving out key words. The students fill in the missing words.
- Students are assigned characters and they read those parts.
- Students read orally taking turns. The group can question, discuss readings and summarize.

Increase word recognition by

- Spending time listening to tape recording of books while visually tracking the words.
- Phonetic awareness—teaching of letter sounds and letter sound blends to form meaningful words.
- Learning vowel sounds and associations to recall or identify these sounds in word beginnings and endings (ch, th, sh, etc.).
- Identifying words as a whole unit (sight words). High-frequency words and nonphonetic words are taught this way.
- Enhancing reading skills through regular reading time of 15–20 minutes in the daily schedule. Children can work on reading material of their choice and level.

Develop reading comprehension skills by

- Helping the student determine the purpose of reading, draw on personal experience and access prior knowledge and build-up background knowledge on the subject.
- Pointing out key information (illustrations, captions, headings, chapter questions) in the text before reading through.
- Having children read a page or passage and formulate questions on the same.
- Paraphrasing a passage—explaining the passage in their own words the main idea and significant details.
- Visualizing the read passages as pictures and images helps students with weak language processing.
- Providing students with pad or self-stick notes. They can jot down notes, words to clarify, and text they do not understand. The self-stick notes can be stuck on key points to facilitate learning.

Physical arrangements

Ideally, a dyslexic child should receive supplementary remedial teaching from a qualified specialist. Unfortunately, in India this is not always possible, and thus the role of schoolteachers becomes very important. Simple tips listed below will go a long way in helping dyslexic children achieve academic success and these steps may be the only strategies needed to help mild dyslexics.

- Make the child sit near the teacher and face the board so that the teacher is able to observe and help when necessary, and encourage the child to ask for help when required.
- Keep working environment quiet, nondistracting and attractive.
- Use keyboard/word processors, computers, calculators and tape recorders to aid learning in the process towards encouraging automatic responses wherever possible.
- Provide extra time to complete work in the classroom, or to copy from the blackboard.
- Judge the child's ability more on oral responses than written expression.
- Encourage parental participation and involvement.

Dysgraphia

Meena is an 8-year-old. Her teacher complains that she cannot complete written assignments on time. Her writing is slow and laborious, with many spelling mistakes. She tires easily and complains of pain in her fingers when asked to write. Her mother feels she is lazy, as she is very good in oral responses. Her writing sample shows, apart from spelling mistakes, omissions, insertions, and difficulty in spacing. Her syntax is also poor. Meena has dysgraphia.

Dysgraphia—extremely poor handwriting or inability to perform the fine motor movements required for handwriting.

Written language is one of the highest forms of communication. In the hierarchy of language abilities, it is the last to be learnt. Skills in listening, speaking, and reading have to be developed before writing skills. Difficulties or poor foundation in any of these areas would affect writing. Unfortunately, in our present educational system, this fact is ignored and children are pushed into writing even before they are perceptually ready for it. Ideally, children should be provided with adequate opportunities to develop perceptual skills necessary for writing during preprimary years.

Handwriting

Handwriting is very important in written expression. However well-organized a written paragraph may be, it will not convey a thought adequately unless it is presented in legible handwriting. Difficulties in handwriting could be due to visual, perceptual, visual-motor, and spatial deficiencies. Intervention should focus on developing these perceptual skills.

Introduction of uppercase followed by lowercase and then concise writing could lead to confusion in many children, as the scripts are different visually. Many schools have opted to teach cursive writing first to avoid confusion. This form of writing has a natural rhythm and speed and also reduces errors in spacing and reversal, as cursive letters are written as units.

Intervention Strategies

- Perform gross body exercises showing direction (e.g., up and down, left and right, forward and backward, out and in). For example, direct the child to "raise your right hand up in the air," "make large circles with your writing hand in front of your body," "bring your arms in toward your body," "make long straight lines with your writing hand going from top to bottom."
- Use the chalkboard for some of the exercises listed above. For example, direct the child to "make a long line from left to right," "draw a circle in toward your body," "make a line going from bottom to top."
- Use templates of geometric figures for tracing with fingers, chalk, or pencil.
- Have children trace figures and letters by placing tracing-paper over the figures to be duplicated. In the beginning, tape or tack the tracing paper to the desk.
- Direct children to reproduce figures with their fingers in wet sand or finger-paint.
- Ask children to identify wooden figures or letters while their eyes are closed. If wooden forms are not available, draw letters with your finger on the back of the child's hand or on her back. Children can work in pairs and tally points. Stress particularly difficult figures and letters.
- Use games that encourage children to learn the common strokes of most letters:

  - Vertical lines ("finish building the house")
  - Sharp peaks ("put a crown on the king's head")
  - Wavy lines ("make some wiggly snakes")

- Circles ("finish the man's face")
- Half-circles ("put the handles on the other cups")

- Gradually direct the children to reproduce different shapes on command.
- Provide a pegboard and a number of different pegs. Give the child specific directions for placing the pegs on the pegboard (e.g., "Put the green peg above the blue peg," "Put the red peg to the left of the brown peg," "Put the orange peg below the yellow peg").
- Prepare a scrapbook of pictures that illustrate position words, such as in, out, below, under, on, up and down. Ask the child to find pictures in magazines that illustrate these words.
- Provide modeling clay to manipulate. Ask the child to mold particular objects or have the child create her own figures.
- Manipulating tools or kitchen utensils provides fine motor practice. Have the children use screwdrivers, hammers, and spoons in a variety of situations.

Spelling

Spelling is one area of the curriculum where there is no room for creativity or originality. Spelling has to follow rigid rules of the language. Spelling a word is much more difficult than reading a word. Reading a word in print is a task of decoding and in a reading situation there are many clues to aid the reader in word recognition including context, phonics and structural analysis. Difficulties in spelling could arise out of visual and auditory perceptual skills. Many children who are poor in spelling are good at decoding words in reading, but children who are poor readers are invariably poor in spelling also.

Strategies for teaching spelling

The best method to teach spelling is by a multisensory approach that utilizes the auditory, visual, kinesthetic, and tactile modalities.

1. Meaning and pronunciation: Have a child look at the word, pronounce it correctly, and use it in a sentence.
2. Imagery: Ask the child to see the word and say the word, say each syllable of the word, then the full word syllable by syllable. Follow this with oral spelling. Then trace the word in the air, or over the word itself with a finger.
3. Recall: Ask the child to look at the word, close eyes and see the word in the mind's eye, follow with oral spelling of the word, open eyes to see if it was correct. If an error is made the process should be repeated.
4. Writing the word: The child writes the word correctly from memory, and then checks the spelling against the original to see if it was correct. The writing should be checked too, to make sure that every letter is legible.

5. Mastery: The child covers the word and writes it. If written correctly, then the word should be covered again and written twice more.

Spelling Activities

- Choose long words, ask students to look at its configuration, i.e., little words within the word. Practice sounding the syllable in the word—cover part of the word while demonstrating how to sound one syllable at a time.
- Have readily available resources for students' access—a list of commonly used words, dictionary, etc.
- Help the child split a difficult word into syllables and spell the word listening to the sound; refer to a dictionary, etc., and find the spelling himself.
- Games like boggle, scrabble, crossword, etc., reinforce spelling. Extra points could be awarded to a child who has difficulty.
- Encourage students to maintain a list of words they wish to master.
- Teach students to look for patterns in words. Teach word families, multisensory strategies for enhancing spelling.
- Using interesting but short games like tapping out the sounds or syllables in word, painting words with water or paint brush, spelling words with common tunes, writing words in air, on body, guessing words written on back, hands, etc.

Written Expression

Poor facility in expressing thoughts through written language is a very common disability of communication skills. Many children are unable to express ideas through writing. The ability to write down ideas requires many prerequisite skills: facility in oral language, ability to read, skill in spelling, a legible handwriting and knowledge of rules of written usage. In addition to the above, the child must have something to write about. There is a strong relationship between the quality of input experiences and the quality of output in the form of writing. Therefore, the child must be exposed to a variety of stimulating experiences, such as stories, field trips, and discussions and oral language activities.

Strategies for teaching written expression

Like any other skill, much practice is needed in learning to write. The child should have many experiences in writing. The child should be encouraged to write as much as possible. Keeping journals or simply writing a certain number of pages every week as part of an assignment are excellent ways to improve the quality of writing. The child will of course need to be helped with spelling. But teachers should avoid correcting every spelling and grammar mistake made in order to avoid discouraging the child. For the child who makes errors in many areas, only one skill at a time might be selected for correction.

Examples

- For individuals experiencing difficulty in expressing their thoughts in writing, supply specific instructions, activities, and exercises. These students respond to structured assignments that tell them exactly what to do. As the student progresses, decrease the structure gradually.
- Give the student an uncluttered picture of a specific object (or the actual object) and ask her to write its name. Gradually add action and description until the sentence develops.
- Give each student an action picture, and instruct each student to write a one-sentence description of what is happening in the picture.
- Read an exciting story to the class, omitting the ending. Have students write their own endings.
- Have a student use a tape recorder to dictate a story on a specific topic. Type the story on to paper, leaving key words blank. Ask the student to read the story and complete the sentences. Students can verify their work by replaying the original tape.
- Provide the student with a list of words and a paragraph with missing words. Ask her to complete the paragraph by inserting the words appropriately.

Dyscalculia

Rakesh, a 12-year-old was good in his studies, scoring above average marks in all (but one) subject in every exam. However, for the past one year he had expressed an unwillingness to even go to school! His mother intuitively understood that it was probably a result of his deep fear of mathematics, in which he was unusually weak. This resulted in his teachers constantly hauling him up in class, saying that he was a lazy boy who did not apply himself—an observation, which was misplaced, and one that hurt Rakesh deeply. Rakesh has dyscalculia.

Dyscalculia is a mathematical disability in which an individual has unusual difficulty solving arithmetic problems and grasping math concepts.

Difficulties in math though not as prevalent as reading disability are being increasingly recognized. Children with reading disabilities are identified and referred for remediation more often than children with math disabilities, perhaps since problems are very commonplace. Dyscalculia ranges in degree from mild to severe.

Students experiencing math problems can be found at all age levels. During preschool years, many children have trouble matching or sorting objects, differentiating various sizes and understanding the language of mathematics.

- During the primary grades, the student with math difficulties encounters problems with computational skills.

A sound program of Math Readiness during preprimary and early primary years is necessary to lay a strong foundation, thus avoiding to the maximum extent possible the difficulties in math later.

- Problems with measurement, fractions, percentages, and decimals can also be experienced during the primary and middle-school years.
- Many students have problems in mathematics at the secondary level because of inadequate foundation skills.

Intervention Strategies

Teachers have to understand that children with difficulties come with accumulated stress due to experience of failure, which gets constantly reinforced leading to a "don't even try" situation. So the first task of the teacher is to provide accommodations to help them bypass their difficulties so that they can be successful in classroom math.

The following present a collection of techniques and methods for teaching the child with an arithmetic disability.

- Counting materials, an abacus, beans, sticks, play money, rulers, and measuring instruments are some of the items that a child will need when learning mathematics.
- Matching, sorting, puzzles, pegboards, form boards may be used to teach shapes and spatial relationships.
- Concepts of size and length can be taught by comparing and contrasting objects of different sizes, so that the child formulates concepts of smaller, bigger, taller, shorter, etc.
- Children can be taught to count by using the multisensory method. Some children learn to count verbally, but without attaining the concept that each number corresponds to one object. Making a strong motor and tactile response along with the counting helps such children. Have the child establish the counting principle through motor activities; e.g., clap three times, jump four times, tap on the table two times, etc.
- Playing with sets of objects, such as cards with colored discs, domino games, playing cards, etc., all provide excellent material for developing concepts of sets.
- As the child learns to count, quizzes like asking the number that comes after six, or before five or between two and four, can help in learning serial order and relationships.
- Ordinary playing cards can be used for teaching number concepts. Sequencing, matching, adding, and subtracting and quick recognition of numbers are some of the activities that can be pursued with playing cards. Flashcards can be used with problems of addition, subtraction, multiplication, and division. Give real life exposures to math. Encourage expeditions to shop for small items to work out the concept of change, help in cooking different recipes to understand the concepts of measurement, help the classteacher to count the number of work sheets required, etc. Several software programs are available to help children with reading and mathematical problems to improve their work. These should be used as audio-visual aids to make these children understand the various concepts.

General Accommodation for Children Who Struggle in Math

- Provide many kinds of manipulatives to help visualize and work out problems.
- Allow students a choice of computing with calculator, paper and pencil, or mentally.
- Allow extra time for math to avoid errors due to rush.
- Provide squared or graph paper of various sized squares.
- Reduce the load of assignments provided.
- Color-highlight processing signs for students who are inattentive to change of operational signs.
- Provide large workspace during tests. If necessary, rewrite test items on another paper with more space for computation.
- Provide chart of multiplication facts and conversion table for reference.
- When testing mastery of concepts in long division and multiplication involving large numbers, give problems with numbers for which most students know the math facts, i.e., × 5, × 2, etc.
- For mastery of multiplication, use mnemonics, music rhythms, etc., to help recall. Also encourage the students in finding patterns in the tables, e.g., for 9 tables, each successive step has one more in the tens place and one less in the units place. Also teach finger tricks for 6, 7, 8, and 9.

Problem-solving Activities

- Have the students read story problems and decide on the mathematical operation required to solve the problem, without actually doing the computation.
- Discuss word clues in story problems that indicate mathematical operations. Make students more aware of these key words by underlining or circling them on work sheets. Some word clues include *altogether*, *left*, *remain*, and *lost*.
- Present story problems orally and direct the students to solve them mentally.
- Orally analyze the steps that are required to solve a particular problem.
  - ♦ What is given.
  - ♦ What is asked.
  - ♦ What operation or operations to use.
  - ♦ The solution, and a check of the answer.

The Secondary School Years

As the student reaches middle and secondary school, the focus of intervention undergoes a change—from direct remedial interventions to attention on coping strategies, where the student is encouraged to draw on internal resources learnt during the primary school years to tackle problems faced at this stage. This shift in focus empowers the student to be more in control thereby augmenting motivation, perseverance, and self-reliance.

Homework

Homework is one aspect of the general education curriculum that has been widely recognized as important to academic success. Teachers have long used homework to provide additional learning time, strengthen study and organizational skills, and in some respects, keep parents informed of their children's progress. Generally, when students with disabilities participate in the general education curriculum, they are expected to complete homework along with their peers. But, just as students with disabilities may need instructional accommodations in the classroom, they may also need homework accommodations.

Many students with disabilities find homework challenging, and teachers are frequently called upon to make accommodations for these students. Some guidelines that have helped improve homework results are given here.

Give clear and appropriate assignments

Teachers need to take special care when assigning homework. If the homework assignment is too hard, is perceived as busy work, or takes too long to complete, students might tune out and resist doing it. Never send home any assignment that students cannot do. Homework should be an extension of what students have learned in class. To ensure that homework is clear and appropriate, consider the following tips for assigning homework.

- Make sure students and parents have information regarding the policy on missed and late assignments, extra credit, and available adaptations. Establish a set routine at the beginning of the year.
- Assign work that the students can do.
- Assign homework in small units.
- Explain the assignment clearly.
- Write the assignment on the chalkboard or class bulletin board and leave it there until the assignment is due.
- Remind students of due dates periodically.
- Coordinate with other teachers to prevent homework overload.

Make homework accommodations

Make any necessary modifications to the homework assignment before sending it home. Identify practices that will be most helpful to individual students and have the potential to increase their involvement, understanding, and motivation to learn. The most common homework accommodations are to

- allow alternative response formats (e.g., allow the student to audio tape an assignment rather than write it);
- adjust the length of the assignment.

Accommodation

Accommodations come in two basic forms. First, *physical accommodation*—in which students are assessed and graded to what is believed to be an individual student's unique abilities. Examples include the following:

- Reading a test to a student with significant reading disabilities.
- Allowing extra time to take tests for students who process information slowly.
- Allowing students with writing disabilities to dictate answers to tests in lieu of having them write responses.
- Basing grades on effort as opposed to actual progress or demonstrated learning.

Second, *curricular accommodations*—in which the nature of the curriculum is often modified so that students with LD are not expected to learn as much of the same material, or the content is significantly simplified. Examples of content accommodations for students with mild cognitive disabilities include the following:

- Providing easy-to-read texts adapted for reading difficulty.
- Providing special content-area classes (e.g., social studies, science, language arts) that are modified so that content is briefer and simpler.

Many practices associated with providing students with accommodations water down the curriculum and expectations of students with mild cognitive disabilities. Such accommodations may initially seem like logical practice, but they are inherently limited in many ways.

Limitations of watered-down curricula

This type of curriculum does not allow students to form schemas that reflect understanding of the interrelationships among different concepts and facts. Watering down the curriculum may contribute to greater failure experiences in the long term because the practice restricts students' opportunities to learn. Further, "easy-to-read," adapted texts are often counter-productive because ideas tend to be presented in short, choppy, list-like bits of information.

The Alternative: Watering Up the Curriculum

Several factors suggest that the emphasis should be on *watering up* the curriculum for adolescents with mild cognitive or learning disabilities. The key is "challenge." Two ideas are central to watering up the curriculum. First, instruction should facilitate deep understanding of core ideas and meaningful learning. Second, instruction should strive to change the child in fundamental ways. Thus, in lieu of stressing memorization of facts, the emphasis is often on developing information processing skills (e.g., finding and making sense of information, recognizing core ideas, discriminating essential

from non-essential details, recognizing the structure of information, using information to solve problems, and effectively communicating information to others). In addition, instruction in effective and efficient learning strategies is often integrated into the ongoing content (e.g., social studies, literature) instruction. Arguably, all students need to develop these kinds of cognitive skills.

The accommodations approach to curricular modification has a number of merits, especially those associated with how students are assessed. Unfortunately, accommodations often result in a watering down of the curriculum, which entails the assumption that students with cognitive disabilities are incapable of developing higher order thinking skills. The result is that they are taught less content that is, moreover, divorced from any meaningful context.

Social Life

During adolescence concerns are centered on relationships, schoolwork, and the future. Finding direction in life and self-identity can be especially stressful for people who are "different." The fact that in many cases, students with LD have normal to high intelligence quotients further compounds this distress. Also, due to the negative experiences in school and college, such persons are deprived of the usual quota of socialization. Thus learning disabled youths may or may not be socially skilled enough to interact with their peers and these experiences are cyclic. This needs to be kept in mind while organizing activities for children and adolescents with LD especially the fact that the most compelling predictor of postschool success seems to be "in-school" success for the youngster with LD.

Attention Deficit Hyperactive Disorder

Ishwar, a 9-year-old, is an enigma to his parents and teachers. He is an intelligent boy, but when it comes to performance, it is very frustrating for the teachers, as he performs well one day and is a total failure on the next. His behavior is equally unpredictable, with good and bad days. He is a nightmare for teachers because of his high activity level—he is constantly on the move, entertaining and distracting the other children in the class. He gets bored easily, is disorganized and needs constant prompts to complete or sustain an activity. Ishwar has Attention Deficit Hyperactive Disorder (ADHD).

A psychological syndrome characterized by display of developmentally inappropriate failure of attention, persuasive impulsivity, and excessive motor activity.

Ajay was always a bubbly boy running about all over in his kindergarten school and he did seem to have difficulty in paying attention to the nursery rhymes and number work his teacher did with him. His troubled mother was told not to worry by his pediatrician who also said Ajay would outgrow his problems.

The problems seemed, however, ever-increasing and in his subsequent classes his out-of-seat behavior only grew worse, matched by his persistent underachievement in academics. It was all the

more a mystery as he was an intelligent child and at home with simple instructions, one-to-one supervision and limited setting he seemed to do reasonably well in academic tasks. A hassled Ajay and his mother met a developmental psychologist when Ajay was on the verge of being expelled for behavioral problems. Ajay was found to have significant ADHD with a mild LD and average intelligence.

A regimen of behavioral management for his hyperactivity, attention enhancing tasks and one-to-one, supervised special hours in school, supplemented by medication for ADHD brought Ajay back onto the mainstream before anything untoward could happen.

ADHD is a neurologically based disorder, characterized by developmentally abnormal degrees of inattention, impulsivity, and hyperactivity. ADHD often interferes with the child's ability to function with success academically, behaviorally or socially. Occasionally misdiagnosed as "emotionally disturbed" or "undisciplined," these children create havoc at home and school. ADHD causes highly inconsistent performance and output. Children with ADHD live in distraction and chaos all the time—bombarded with stimuli in every direction and unable to screen it out. It can be compared to listening to a lecture in a marriage hall. The child needs tremendous effort to focus on a task.

Intervention Strategies

Minor changes in the classroom environment and teaching methodology can go a long way in helping a child to cope with ADHD. Small changes in how the teacher approaches the child or what she/he expects from the child can turn a losing year into a winning one for the child.

Inattention

Seating:

- In a quiet area far away from doors/windows.
- Near the teacher (to improve listening) and preferably next to a role model.

Assignments:

- Allow extra time to complete assignments.
- Shorten the assignment time to coincide with time of attention; gradually lengthen the sessions.
- Give assignments one at a time to avoid overload.
- Cue students to stay on a task.
- Give clear, concise instructions.
- Written instructions along with oral instructions help, as children with ADHD have difficulty in recalling what they have heard.
- Include elements in which self-reminder can also help to improve listening skills, e.g., "mustn't talk when listening."

Impulsiveness

- Ignore minor, inappropriate behavior.
- Attend to positive behavior with praise. Social praise helps the child to develop good self-esteem and also increases the frequency of positive behavior.
- Set up behavior contracts and encourage self-monitoring of behavior.

Motor activity

- Allow the child to stand at times while working.
- Set goals for maintenance of proper posture and encourage self-monitoring. Cueing also helps.
- Provide opportunity for movement, i.e., running errands, distributing, and collecting books, etc.
- Provide short breaks.
- Supervise during transition times.

Organization/planning

- Send weekly/daily progress reports home. Seek parental help in facilitating organization skills.
- Supervise writing down homework.
- Encourage and reward neatness rather than penalize sloppiness.
- Help students set short-term goals.
- Do not penalize for handwriting, if visual-motor difficulties are present.

Socialization

Structure

External order compensates for internal chaos. Establish routine especially at potential high-stress time like breaks, lunch times, games period and after-school hours. Visual and written instructions could be used as reminders.

Supervision

During any activity, check periodically to make sure the child is progressing correctly. Deal with problems while they are still manageable. Rules should be placed in positive terms, i.e., instead of saying "Don't grab," say "Request if you want something." Be specific in directions. Instead of saying "Don't run around," say "Please come back to your seat," etc.

Support

To ensure continued success, provide instructions on any changes needed next time and offer encouragement.

Children with ADHD possess a lot of desirable traits. A teacher should also focus on these positive traits and use them to facilitate the child to cope better. Some of these traits include the following:

- Creative
- Spontaneous
- Energetic
- Accepting and forgiving
- Inquisitive and imaginative
- Innovative
- Resourceful
- Gregarious
- Resilient

Understanding and respecting differences and responding to children, based on their learning styles, open up a new vista for the child, in fact for all children and not only for children with special needs. Accepting the fact that every child has the potential and motivation to learn, and that adapting the teaching and evaluating strategies to suit their needs would allow every child to grow to their full potential.

FACT SHEET 1

What is Learning Disability

Learning disability (LD) is a term used to denote a neurological handicap that interferes with a person's ability to receive, process, store, and retrieve information. LD creates a gap between a person's ability and performance caused by an alternation in the way information is processed. Repetition and drilling does not alter this processing, but presenting materials in a different way helps.

Characteristics of Dyslexia

- Speech difficulties are common in children with dyslexia. Stuttering and lisping are quite common. Delayed spoken language is often an indicator of dyslexia.
- Spatial difficulties—leading to reversal of letters (b–d), words (saw, was) and sometimes even sentences and difficulty in scanning from left to right.

- Visual memory difficulties in recalling sequence of letters in words (spelling).
- Difficulties in visual and motor figure ground—resulting in illegible handwriting, difficulties in scanning lines and discrimination of letters.
- These characteristics appear more often in combination

Apart from difficulties with phonological processing, dyslexia is also associated with differences in cognition and learning.

The following cognitive characteristics have been widely noted in connection with dyslexia.

- Impairment of short term memory.
- Difficulties with motor skills or co-ordination.
- A range of problems connected with visual processing.

The Usual Suspects

The most common learning disabilities are:

Auditory and visual processing disabilities: A person with normal hearing and vision has difficulty understanding and using language.

- Dyslexia: A person has trouble understanding written words, sentences or paragraphs.
- Dyscalculia: A person has difficulty solving arithmetic problems and grasping math concepts.
- Dysgraphia: A person finds it hard to form letters or write within a defined space.

Academic Difficulties

- Children with LD also have inefficient memory typified by frequently being unable to remember personal information such as address and phone number and classroom directions. Have difficulty recalling details, the names and sounds of letters and number facts. Have difficulty retaining sight words and visual details. Almost all children with LD have poor or uneven achievement in academics.
- Many children with LD are confused about time relationships, and also have a poor sense of direction frequently exhibiting right–left confusion. They become lost easily, unable to follow directions. Other examples are inability to tell time, to understand the calendar, understanding the difference between tomorrow and next month, etc.

Language Problems

Dyslexic children have problems with reading, a lack of awareness of phonemes that make up words, difficulties with spelling, sequencing of letters in words, and difficulty with pronouncing words (may reverse sounds).

- Early warning signs are delay in speech, delay in learning the alphabet, numbers, days of the week, month, colors, shapes, and other basic information. They also have difficulties understanding subtleties of language such as jokes or slang, concept words (forward/backward, near/far), etc. There may be mispronunciations, omission of sounds and immature vocabulary.
- Auditory and visual processing difficulties may also be present. Here children have difficulty distinguishing between words that sound alike (pig/big). There is trouble rhyming words, and in blending sounds into words. Visual processing difficulties may include inability to recognize letters, words, or other printed symbols quickly and accurately. For example, there may be confusion with *b* and *d*, or read *was* for *saw* and *on* for *no*.

Motor In-coordination

Motor coordination problems are common. These children may be clumsy or awkward. It may be difficult for them to write, draw, or copy with neatness and accuracy. There may be problems with fine motor skills such as tying shoes, buttoning, using scissors or learning to sew.

Behavior Problems

LD can present with hyperactivity and impulsive behavior with lack of reflective thought prior to action. These children have poor peer relationships and poor social judgments. They may behave inappropriately in different situations and fail to see consequences of their actions. They may be overly gullible, and easily led by peers. They show poor adjustment to environmental changes and excessive variation in mood and responsiveness.

Emotional Problems

- LDs often go unrecognized. Children may present with symptoms such as school refusal or agoraphobia, or develop somatic symptoms such as headaches and stomach-aches, especially on the school days they are expected to speak or read in front of the class.
- Undiagnosed and untreated, these problems increase till the child begins to dislike school, refuses to do homework, and perhaps develops oppositional defiant symptoms. Some children may become verbally abusive and physically provocative. Successful intervention with these children requires the diagnosis and treatment of the learning and language problems. Behavioral and emotional problems are more likely to emerge as children mature and academic tasks become more difficult and peer interactions become more complex.

Environmental Causes

These could be poverty, inadequate housing, family dysfunction, and parental psychopathology or substance abuse, dysfunctional peers, too much of television viewing, inadequate or improper schooling.

Attention deficit in a child or adolescent can influence behavior, academic performance and social and emotional adjustment. The main symptoms are poor attention span, distractibility and impulsivity. This is frequently associated with hyperactivity. Attention difficulties are a major cause of school failure.

From the earlier discussion it can be seen that children and adolescents who have learning disorders experience a myriad of difficulties. The chief complaint to the physician may be distress caused by the more commonly associated comorbid conditions: depression, anxiety, substance abuse, or sleep disorders.

Hearing and Vision

Poor school performance could be due to hearing impairment. Even mild and unilateral hearing deficits, can impair a child's ability to listen in the classroom, especially if the classroom is noisy and situated in an undesirable location such as in the middle of a noisy and busy area. Visual impairment is rarely the sole cause of school failure.

Diagnosis

Detailed history is most important in making a diagnosis of dyslexia. When dyslexia is suspected, a battery of standardized tests comprising of tests of reading, spelling, language, and cognitive ability must be carried out. Additional tests of academic achievement, e.g., math, language, or memory may be administered as part of a more comprehensive evaluation of academic, linguistic, and cognitive function. The diagnosis is made after careful consideration of the history, clinical observations, and testing data.

FACT SHEET 2

Development of Reading Skills

Stage 1: Kindergarten to First-half of Grade 2

- This is a period of skill acquisition.
- Emphasis is on learning the tools or codes of reading, writing, and mathematics.
- In reading, emphasis is given to decoding skills: symbol identification, knowledge, and application of letter sound associations, and sight word recognition. Problems that are specific to appreciation and discrimination of letter sound-associations are suggestive of language difficulties.

- Most reading is oral, and the focus is on decoding accuracy. Typically at this stage, children rely heavily on sight recognition or words. Reading tends to be slow and hesitant, but a noticeable lack of expression may signal underlying language difficulties. Comprehension is measured by the ability to respond to specific questions.
- Spelling demands, relatively limited at this level, consist largely of writing letters, single words, and short sentences from dictation.
- Written composition is not emphasized at this stage, although some instruction is provided in basic elements of writing mechanics: capitalization, end punctuation and use of complete sentences. Copying and handwriting skills are given highest priority. Attention should be given to the correct pencil grip, regularity and efficiency in forming letters.
- Development of mathematical computation skills and understanding quantity take place at a concrete level. Skills acquired include basic concepts such as addition, and subtraction and solving simple word problems.

Stage 2: Second-half of Grade 2 to Grade 4

- This stage is a period of continuing acquisition of the basic tools of learning and of practice and consolidation of what has already been learned.
- Reading and decoding skills include not only sight words but also knowledge of words that adhere to regular phonetic and morphologic rules. Vocabulary and subject matter remain similar to daily experiences.
- Silent reading is introduced during this period.
- Writing undergoes greater change during this period. Cursive is introduced. Emphasis is placed on rules of writing mechanics and written composition. Spelling and knowledge of mechanics such as punctuation, capitalization, sentence structure, and word usage gain increasing importance at this stage. Composition at this stage is primarily narrative in style, and there is increasing ideational fluency and organization.
- Mathematics also encompasses in the complexity of demands. Regrouping is introduced. Regrouping also presents multiple-step problems necessitating active working memory, sequencing, spatial organization, and fine motor accuracy. Multiplication and division are introduced at this stage and word problems assume increasing importance.

Stage 3: Grade 5 to Grade 8

- This is a period when academic demands change dramatically, when students with mild learning disabilities often become overwhelmed and encounter difficulties for the first time. There is a shift from learning to read to reading to learn. There is an enormous increase in the volume of material to be processed and expressed and the tools of reading, writing, and mathematics need to have become well-automated and easily retrieved if the child is to keep up with the productivity demands. Organization and study skills also become critical.

- Reading becomes the avenue for most learning across the curriculum. Two most significant changes occur in the volume and nature of the content. With the increased amount of reading, rate of silent reading becomes extremely important. Content switches from narrative to exposition, removing plot structure that may have aided comprehension.
- Written output emerges as the primary mode through which learning is evaluated, and any impediment to effective written expression can have devastating effects on academic success. There is need for automatic retrieval of letter formations, basic spellings and rules governing mechanics. All of these factors have to be integrated simultaneously and synchronized with motor and ideational fluency.
- Automaticity and integration become keys to success in mathematics as well. Complex multiplication, long division, and computation with decimals and fractions all require that basic facts be quickly and accurately retrieved. The introduction of fractions, decimals, and percentage necessitates a more complex conceptual understanding of computation processes, number equivalence, and place value. Word problems, like other reading material become more lengthy and complex.

Stage 4: Grade 9 and beyond

- This is an ongoing period when previously learned skills must be used for a variety of purposes. Emphasis is on interpretation and manipulation of information.
- Written expression becomes paramount for academic success. Writing must be used for a variety of purposes and includes different textual formats. Ideational fluency, elaboration, easy retrieval of vocabulary, and appreciation of language are essential.
- Success in mathematics is heavily dependent on abstract, logical reasoning: appreciation of quantitative and spatial relationships, understanding of concepts of equivalence and proportion, and cumulative and sequential memory. There is a greater challenge for language and rapid assimilation of technical vocabulary.

Understanding of the stages of reading skills is important for assessment, diagnosis, and remediation strategies.

FACT SHEET 3

Dysgraphia

A neurological-based writing disability in which a person has difficulty expressing thoughts on paper and with writing associated with unreadable penmanship and problems in gripping and manipulating a pencil.

The written form of language is the highest and most complex form of communication. In the hierarchy of language skills, writing is the last to be learned. Prerequisite to writing is a foundation of previous learning and experiences in listening, speaking, and reading.

Even though dysgraphia is difficulty with handwriting, the other components of written expression—spelling and written expression which are impaired in children with learning disabilities are also discussed here.

Prerequisites for Writing

- Fine motor skills, leading to good grasp of the pencil.
- Perceptual motor control—controlled movement is a very important precursor for smooth and fluent writing.
- Spatial concepts—directionality and laterality are important in the mastery of symbols (letters).

Writing requires the following skills:

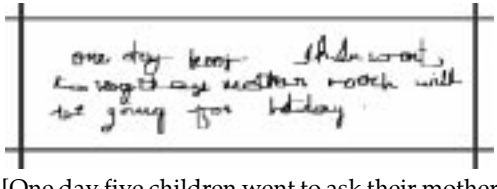
- The ability to keep one idea in mind.
- Formulate ideas in words and appropriate syntactic patterns.
- Plan the correct graphic form for each letter and word.
- Correct manipulation of the writing instrument to produce letter shapes.
- Integrate complex eye–hand coordination.

Visual and motor memory

- Visual perceptual skills—necessary in recalling the symbols and also reproducing it in a pattern (spellings).

Common Signs of Dysgraphia:

- Bad or illegible handwriting (see Figure 9.1)
- Awkward or cramped pencil grip.
- Avoidance of tasks involving writing.



[One day five children went to ask their mother where will we going for holiday.]

Figure 9.1: Writing Sample

- Inconsistent in the way letters and words look.
- Difficulty in expressing ideas on paper.
- Inability to properly form letters.
- Writing may be slow and labored.
- Difficulty keeping letters on the line.
- Inability to understand the relative sizes of letters.
- Crowding of letters within words.
- Difficulty writing within the margins or line-spacing and inconsistent spacing between words.
- Poor spacing between words.
- Difficulty in reading written work even when the spelling is correct.

Handwriting Skills

- Has a good tripod grasp.
- Able to draw horizontal line (left to right) and vertical line (top to bottom).
- Able to draw a circle.
- Copies letters and words.

Writing Letters

- Place a little green dot at the starting position for the letter stroke and a small red dot at the termination point. Arrow clues to indicate the direction of the stroke could also be provided.
- Teach the basic strokes for most letters sequentially. For example, teach the letter "t" as two separate strokes: | and -. Eventually, encourage the child to join the basic strokes together.
- Teach letters with easier strokes first. The following letters are considered the least difficult for children to learn: c, i, l, o, t, v.
- Tape an alphabet chart to the child's desk.
- Use clean, lined paper for children with aligning and spacing difficulties.
- Teach children to "talk out" strokes in making specific letters. For example,

    - W—Slant down, slant up, slant down, slant up.
    - i—Short line, dot.

Cursive Writing

- Devise games for student practice of various cursive strokes. For example :

    - Stringing beads.
    - Making waves.
    - Making curly hair.
    - Lassoing horses.

- Use dot-to-dot or dash-to-dash letters to informally assess readiness for cursive writing. Gradually fade out the dots or dashes, allowing the child to make the complete letter independently.
- Teach letters with similar movement patterns sequentially. The following four groups contain similar strokes: (1) a, c, d, g, o; (2) b, h, f, k, l, e; (3) i, j, p, r, s, t, u, w; (4) m, n, v, x, y, z.
- Place a heavy (possibly weighted) bracelet or wristband on the wrist of a child who has difficulty keeping his wrist in the proper position on the desk.
- Use verbal cues in teaching cursive writing. Teach letters with similar strokes in sequence so that the child can more easily follow the cues. For example, use the "a" strokes in teaching the "g" strokes: "First come around like the 'a,' then go down ...."

Handwriting Activities for Left-handed Students

Observe whether the child uses the right positioning. The left-hander's writing should be slightly sloped to the left—tape the student's paper in the right positioning, if necessary. Seat the child in the left corner of the classroom away from the aisle, if possible, to ensure movement space.

LD students usually encounter many different types of written language problems. They have difficulties in handwriting (formation, size and spacing irregularities, pressure marks and erasures), spelling and written expressions. General competencies required for each of these areas are listed below :

Prerequisite skills for written language

- Able to touch, reach, grasp, and release objects.
- Able to distinguish similarities and differences in objects and designs.
- Has established handedness.

FACT SHEET 4

Dyscalculia

Clinical Signs of Dyscalculia

- Difficulty with common math processes such as addition, subtraction, multiplication.
- Difficulty with math concepts such as sequencing of numbers, and sequencing of rules required in mathematical problems.
- Poor retention and retrieval of math concepts.

- Inability to work with numbers or symbols.
- Inconsistency in understanding and application of math rules.
- Poor sense of direction and time, e.g., difficulty with reading maps, telling time, etc.
- Difficulty in applying rules in sports.
- Trouble keeping track of scores and players during card and board games.
- Inability to handle money transactions in day-to-day living.

Difficulties in Mathematics

- Shape discrimination—confusion in recognizing shapes may cause difficulty in recognizing numbers.
- Size discrimination—concepts like big, small, long and short are very important for mastering abstract quantitative concepts like more, less, greater than, less than, etc. This may also lead to difficulties in estimating area, perimeter, etc., at a later stage.
- Classification—categorizing objects into sets is a very important concept for mastering math. Difficulties in this can also lead to difficulties in simple operations like counting.
- One-to-one correspondence—lack of understanding of this could cause problems even with counting. This may also lead to failure in understanding ordinal numbers.
- Auditory–visual integration—necessary to remember names of symbols (numbers, signs, etc.). Memory deficits could aggravate the problem.
- Place value—confusion in this area can lead to difficulties in addition (involving borrowing and carrying over), division and multiplication.
- Computation skills—in understanding commutative properties of addition/multiplication and concepts that subtraction is an inverse operation of addition and division is an inverse operation of multiplication.
- Problem solving—difficulties in solving word problems due to problems in language, lack of analysis, and reasoning.
- Spatial concepts—difficulty in making measurements of time, distance, etc.

Additional Strategies for Intervention

- Prepare a worksheet with missing math signs. Ask the students to fill them in.
- Promote understanding of the terms *longer* and *shorter* by drawing lines of various lengths on the chalkboard and asking the students to make them longer or shorter.
- Use number lines to develop vocabulary such as *before, after, between, larger than, smaller than*, and *the same as*. Permit students to refer to the number lines in answering questions (e.g., What number comes just *before 7*? What number comes just *after 13*? What number comes *between 6 and 8*?)
- Give students a set of cards numbered from 1 to 10. Instruct them to turn up one card and ask whether that number comes before or after a number that you choose at random. Also, use *more* or *less* and *smaller than* or *larger than* for this activity.

- Print operational signs on flash cards. Let the students practice with the cards every day. Add kinesthetic clues by cutting the signs out of sandpaper and pasting them on the cards.
- Provide color cues for operational signs to call attention to the signs. Also, draw circles or boxes around the signs to enable students to attend more closely to the signs.

Fractions

Not only children but many adults also have difficulty in understanding fractions. To understand fractions, we should be aware that:

- Fractions make sense only when viewed in relation to a whole number. They make no sense as independent entities.
- The understanding of the symbols of the fractions: denominator—the number of parts the whole is divided into; and the numerator—the number of parts of whole which are in consideration.

Materials and experiences should be provided to the children to master these basic facts.

- Fraction and equal sharing—give children a bag of marbles, sweets, etc., and ask them to share equally between 2, 4, 8, and 10 children and write the fractional equivalent.
- Fractions and shapes—draw and cut symmetrical shapes and ask children to fold into 1/4, 1/2, 1/8, etc.
- Fractions/lengths—estimating or measuring length of a long strip, its 1/4, 1/2, 1/8, etc. This activity could be done with capacity, weight, time, etc., for generalization.
- Charts could be drawn to illustrate the relationship of fractional parts to the whole.
- Gradually introduce assignments requiring to work with fractions without visual clues.
- Use the measurements in simple recipes to reinforce fractional components.

FACT SHEET 5

What to Tell Parents

Many parents of dyslexic students are unsure of what sort of help they should give their child. It is not possible to give parents definitive step-by-step guidelines that are guaranteed to lead to success, as each child responds differently to remedial strategies. A trial and error approach is adopted to arrive at the best method for each child.

As there is a strong genetic vulnerability to dyslexia, whenever there is a family history of dyslexia, parents can help their children from the very early stages.

- Picking up talking skills is the most important part of the dyslexic child's early development. Parents should start talking to their child from early infancy, since these children are at risk because of the genetic vulnerability.
- As the baby grows into a toddler, all simple activities (like during feeding and bathing) can be turned into occasions to have chats with the baby. Words can be repeated as repetition is important for learning and simple step-by-step instructions are to given to aid comprehension and improve vocabulary.
- To speed up comprehension, words should be accompanied by action whenever possible.
- If the child is having difficulty in understanding speech by the age of 15–18 months, it is vital to talk very slowly and clearly to him/her.
- Another way of expanding the child's language is to repeat what she/he has said in an expanded form, e.g., when child says water, parents can repeat "I want water."
- Nursery rhymes are invaluable for developing both awareness of words, rhyming and rhythm and appreciation of size, length, number and so on—concepts that often cause confusion for the young dyslexic. From the first year to third year on children can be taught gesture and number rhymes, which will help to lay foundation for future numeracy.
- Toys and other play mediums will improve the child's awareness of size, shape, and dimension, and speed up understanding of direction—up, down, right, left, and so forth.
- Books and reading can be introduced even before the end of first year. Once the child is old enough to understand, parents should read aloud to them for 5 to 10 minutes every day.

Helping the Older Child with Dyslexia

- Parents should motivate the child without pressuring him/her.
- Encouragement by playing educational games, praising even the smallest achievement, building on strengths and teaching the child to tackle weaknesses will go a long way in helping the dyslexic child.
- Children may be unresponsive to parents' help with reading. In such situations it may be better for them to be helped by someone outside the family such as a trained tutor.
- Parents should keep in constant touch with the child's teachers and monitor progress.
- Dyslexic children need a lot of reassurance and a relaxed discussion about dyslexia is important to enable effective coping.
- The most important rule is not to become overanxious about the child's progress, nor communicate any anxiety to the child.

FACT SHEET 6

Specific Teaching Strategies

Dyslexics should be taught in a structured, logical step-by-step way, beginning with single-letter sounds linked to letter names and letter shapes, working in stages through simple one-syllable words to complex multisyllable words. The teaching drills should be based on a multi-sensory technique. In other words, one that utilizes the student's senses of sight and hearing, as well as involving writing down and reading back aloud what has been written—an all-round approach that is particularly successful with dyslexics.

This method may be adapted to teach the various Indian languages.

- These can be drawn and prepared by the teachers if the box of flashcards is not available.
- The letter is presented on one side with the key picture on the reverse side.
- The teacher presents the letter on the flashcard, says the key word and then the sound of the letter.
- The student repeats the keyword and sound.
- The teacher says the sound and then the name.
- The student repeats the sound and gives the name, writing it as she/he says it (translating the sound heard into written letters).
- The student then reads what she/he has written, giving the sound (translating the letters written into sounds that are heard).
- The student writes the letter with the eyes closed to get the feel of the letter. (When vision is cut off, other senses such as touch are sharpened.)

After the child has become familiar with the names, sounds and shapes of the letters, this drill is then modified:

- the student runs thorough the flashcards articulating their sounds aloud (the reading process);
- the teacher then dictates each letter sound in a random order for the student to say the letter's name and then write it down (the spelling process).

This drill is repeated with each set of new sound patterns. The association between single-letter name, sound, and shape should be taught first, along with the knowledge of that some of these letter are vowels, which will be needed in every word.

Gradually, the complete range of spelling patterns is taught before proceeding to the formation of words and sentences. The teacher should thoroughly understand the structure of the language and how it develops. Dyslexic students should be introduced by dictation to sentence formation in its simplest form.

Asking the child to repeat sentences while dictating also helps to improve memory for sentences. More sophisticated sentences are introduced gradually.

- Dyslexic students have to be taught reading, and spelling in a scientific manner with every step distinctly clarified and presented in a comprehensible manner.
- In addition to specially tailored reading and writing tuition, specialist dyslexia therapy should also give help, when needed, with mathematics, directional confusion, telling the time and all the other typical problem areas for the dyslexic.

Some children may need intensive one-to-one teaching.

FACT SHEET 7

Difficulties during Adolescence

The associated conditions of learning disabilities create far more problems than those associated with academics alone. Concern about the social functioning and psychological adjustment of children and adolescents with learning disabilities is high among parents and educators. While there is little doubt that social or behavioral difficulties exist in this population, it needs to be remembered that social skills deficits do not appear to be exclusively or invariably characteristic of children or adolescents with learning disabilities. The limited research literature on social skills deficits in learning disabilities focuses on five hypotheses that attempt to explain the nature of social skills deficits in learning disabilities.

First, social skills deficits are posited to be a consequence of the neurologic dysfunction presumed to underlie a student's academic skills deficits. Second, the academic and learning problems of a youngster with a learning disability result in poor self-concept, rejection or isolation from peers, or other obstacles for the development of social skills. Third, children or adolescents with learning disabilities fail to acquire or perform social skills because of limited environmental opportunity to learn such skills, to perform such skills, and to be reinforced for them. Fourth, social skills deficits are related to a child's or adolescent's familial social support system whose effectiveness is reduced by the stress of dealing with or adapting to a youngster with a special need. Fifth, differences in social skills deficits between learning disabled and nonlearning disabled samples may occur because of the co-morbidity of certain children in learning disabled samples who have other diagnoses such as attention deficit hyperactivity disorder (ADHD) and depression.

FACT SHEET 8

Characteristics of ADHD

Inattention Symptoms

- Often fails to give close attention to details or makes careless mistakes in schoolwork or other activities.
- Often has difficulty sustaining attention in tasks/play.
- Often does not seem to listen when spoken to directly.
- Often does not follow through on instructions and fails to finish schoolwork, chores, or other duties in the workplace (not due to oppositional behavior or failure to understand instructions).
- Often has difficulty organizing tasks/activities.
- Often avoids, dislikes, or is reluctant to engage in tasks that require sustained mental effort (such as schoolwork or homework).
- Often loses things necessary for tasks or activities (e.g., toys, school assignments, pencils, books, or tools).
- Is often easily distracted by extraneous stimuli.
- Is often forgetful in daily activities.

Six or more of the mentioned persist for at least six months to a degree that is maladaptive and inconsistent with its development level.

Hyperactivity

- Often fidgets with hands or feet or squirms in seat.
- Often leaves seat in classroom or in other situations in which remaining seated is expected.
- Often runs about or climbs excessively in situations in which it is inappropriate (in adolescents or adults, maybe limited to subjective feelings of restlessness).
- Often has difficulty playing or engaging in leisure activities quietly.
- Is often "on the go" or often acts as if "driven by a motor."
- Often talks excessively.

Four or more of the mentioned must persist for at least six months to a degree that is maladaptive and inconsistent with development level, to warrant a diagnosis of ADHD.

Impulsivity

- Often blurts out answers before questions have been completed.
- Often has difficulty awaiting turn.
- Often interrupts or intrudes others (e.g., butts into conversations or games).

Symptoms present before 7 years and in more than two settings.

Not all children with ADHD have hyperactivity/impulsivity. There are children who have predominantly inattentive type of ADHD. These children do not have behavior problems. However, they have difficulty in achieving their potential, due to output deficiencies, distractions, and inability to sustain attention and complete tasks. Many accompany LD as well.

Those Difficult Years

"We have always believed that in every bad there lies some good. ADHD has been a blessing for our family, for we have emerged as better parents and happy in the knowledge that all our children are successful in their own way." I sometimes wonder—if this had not happened to our family, would we have been so blessed?

There were the years of guilt, frustration, hopelessness, and many other emotions. My son, Akhil, was difficult, very depressed and by age 12 wanted to "die." No stone was left unturned in our quest for help. Then one day we found the guidance our family needed from a psychologist. For three years, Shorbani and I went to meet her at regular intervals and learnt much. Akhil improved but was of continuing concern. We started seeing a psychiatrist on the advice of our psychologist.

Basically, we were good parents, we had rules laid down for our children, which we forgot to follow most of the time—forgot when we were tired, forgot when we were busy and sometimes forgot that we had to enforce them. Nothing untoward happened as a result of this; only our children received mixed messages.

Behavior modification has changed that and continues to be our foundation. The first thing we did was to make a rules and consequence list for the entire family. Age appropriate rules were designed for all. Similarly, consequences were agreed upon. All the rules and the consequences for flouting them were framed in consultation with the children to ensure that each would be responsible for their choice of action. As parents we made sure the rules were followed.

Goal charts were set up. We would pick three goals to work on. Two were for problem areas and one was a happy one, whose purpose was to help with self-esteem. Rewards for reaching goals were simple and creative. The rewards were incentives, but my children felt a sense of pride when they totaled up the check marks, stickers, or happy faces. The involvement was good!

We began exercising the belief that a parent should never disagree with the other about a consequence in front of the child. So we learnt to wait until Akhil was not in hearing distance. Whenever, we thought that a change in consequences was necessary, the parent who had decided on the initial consequence would be the one giving the new one. Seeing parents so working together helped build our damaged family hierarchy and created a sense of security in Akhil.

Using medications was a very difficult decision for us. We agreed to Ritalin for one month only. Seeing the positive results, we continued to use it, but we do believe that it has worked as we included in the treatment regimen behavior modification, consistency, and structure.

People tell us that we are lucky as Akhil is not affected like other ADHD children. We think that luck had nothing to do with it. It has taken us many years to get here, but the rewards show on all our faces.

I will never forget the pain of hearing my son say, "I want to die." However, it was that day that made a difference in our life. In sharing this with you, maybe I can give you a little piece of hope to hold on to.

Don't ever let go; your child's bright future is on the other end.

Source: Ronojit Banerjee.

Inclusion: Lessons Learnt

To see the world in a grain of sand
And heaven in a wild flower
Hold infinity in the palm of your hand
And eternity in an hour.

To me, as a teacher, "being inclusive" means, being able to look for and find the strengths in every child I come across. That is why, I believe inclusion is a journey from attitudes to achievements.

The school I work in, Fr. Agnel Multipurpose School in Navi Mumbai, is a large mainstream school with a strength of 4,806 pupils. We do understand that inclusive education in India must contend with the present system of education but we also see that inclusive education *can* empower all people—abled and disabled.

Before I go on to narrate our experiences with inclusive education, I would like to mention that we, as a school, did not decide to become inclusive "one fine morning." Right from the time our school started, we have been open to new ideas that would make learning interesting for children. That's how we adopted the Environmental Studies Approach to Learning. This approach believes in using the child's own environment as his/her main resource for learning. Concrete innovative activities that motivate children to explore, experience, and learn with interest and joy are the main features of this approach. Moving in this direction, when some children with special needs came into our school, all that we checked was their capacity to study with 60 others in the class and our ability to deal with that situation. When we were convinced that, with the help of the parents and the support services the children could manage, we took them in. This story began with a visually impaired child, a couple of hearing impaired children and a handful of children with specific learning disabilities.

Next, by starting a "Balbhavan" for providing shelter and education to about 100 to 110 homeless children we explored further into the realms of inclusive education because these children have very special needs too! Over and above this, since the last eight years, we have had no interviews or

(Contd. on next page)

admission tests for the nursery grade. In order to provide admission to 200 kids out of the 600 and odd who apply, we have evolved a lottery system. In this process, if a child with special needs is the lucky one he/she also comes in.

Thus over the years, we have, as an institution, gained a wide variety of experiences in dealing with children with diverse special needs in a regular classroom. Our awareness and knowledge about different disabilities and needs that children can have, has grown considerably and all our positive experiences have turned into convictions.

I would like to share some of the lessons learnt during this process:

- Good, child-centered, innovative teaching practices seem to be the first prerequisites
- The school needs to be a "learning–nurturing organization" in order to promote inclusion.
- Collaboration between general and special education teachers lends a great deal to the success of inclusion.
- Parents have to be a part of the school's design for inclusion.
- Assessment and evaluation systems seem to be a barrier to inclusion in many mainstream schools.

Source: Vijaya Vaithilingam.

10

CEREBRAL PALSY

Reena Sen

The secret of making something work in your life is first of all the deep desire to make it work, then the faith and belief that it can work. Then to hold that clear, definite, vision in your consciousness and see it working out step by step, without one thought of doubt or disbelief.

—Eileen Caddy

Deepa, aged 9 years loves music, eating papri chaat, adores Shah Rukh Khan and chatting with her friends. She studies in grade 2 in a private missionary school that has very inclusive policies and offers both the State Board School Leaving examinations and the National Open School. She was diagnosed with cerebral palsy when she was 1-year-old and referred to the Indian Institute of Cerebral Palsy's (IICP) OPD. She attended this service offering comprehensive management for cerebral palsy and when she was two-and-a-half-year-old, was admitted into IICP's special school.

Deepa has diplegia and although her whole body is affected she has better control of the top half of her body than the lower. Deepa sits on a chair with a cut-out table in front that helps her to keep her body in midline. Her speech is a little slurred and although she can walk with elbow crutches, she uses a wheelchair to move around. She is right handed but can use both hands for activities. Although her parents were happy with the services in the special school and were particularly pleased that physiotherapy inputs were offered as a part of the school services. They were very keen that she should move to a regular school. They felt that this would make it easier for her older brother and twin sister to accept her limitations and would help her integration in the family and their social circle. They were a little concerned about how the twins would interact in the school situation and whether it would lead to any feelings of inferiority in Deepa but were convinced that the odds against would be outweighed by all the positive aspects of regular school.

Deepa is an average student, good in number-work but poor in spelling and there were some concerns about how she would cope in a class with 40–50 other children. However, her parents were determined and with the cooperation of the Headmistress, Deepa was asked to come for an

admission test. The Headmistress interviewed Deepa and during an admission test she asked the classteacher to observe her. The Headmistress and the Coordinator felt that she would do better in a grade lower than her year group both in terms of her academic competencies and scope for settling into school. She asked for a staff meeting in which she discussed Deepa and showed them a photograph. She discussed details relating to classroom management and the teachers decided that Deepa would be made to sit in the front row next to a couple of children who were known to be kind-hearted and helpful. She allowed the parents to leave a suitable chair and cut-out table for Deepa in the school. She also gave permission for her parents to provide an attendant for Deepa to help her in the toilet. There were some initial problems mainly to do with time taken to complete assignments and Deepa's feelings of sadness that she was not able to take part in physical education and sports. Her twin, Deepika also had initial feelings of embarrassment about her sister being "different" but there were so many children in competition with her to help Deepa, that she realized that she could get on with her own "life" and got over her negative feelings.

One year later, this is what Deepa has to say about school: "I love coming to school. I chat with my friends and during the break time we crack jokes and we laugh. I even took part in the sports day drill where I sat on my wheelchair. My friends love pushing me around. My *ayah* used to take me to the toilet but now my friend pushes my wheelchair and the school has put a handle in one of the toilets so I can use it myself. I love Maths and History. I hate learning spellings! My teacher gives me extra time to finish my work and I stay back after school three times a week to finish my work. I find the work easy and difficult—both together!"

Her parents know that many a hurdle will have to be crossed as she moves on in school both for physical and curricular access but are happy that Deepa's entry into regular school has got off to a positive start.

There are so many children ....

Deepak is 13 years old. He studies in grade 8. His teachers and the school management have great regard for him because he does extremely well in academics. They have made adjustments, by bringing his class to the ground floor, because he cannot walk and uses a wheelchair. Since his upper limbs are also affected, his writing is very slow but very neat. Teachers help by asking his peers to use carbon paper and make notes for him. He has many friends, loves cricket and music, and hopes to go to college.

His parents were extremely worried about his attending a mainstream school; they felt he may not be able to cope with an ordinary classroom but have supported his needs in school and therapy. Today, they are grateful that the special school gave them the encouragement and help to transfer Deepak to a mainstream school. They look forward to their only child's future with pride and hope.

Anusha is 11 years old, she is a wheelchair user, but can walk with support for a small distance, within the home or classroom. She cannot write, but can type and use the computers. She has some visual problems, which lead to visual–perceptual problems in space, distance, and depth. She reads, but prefers a larger print size. She studies in grade 6, and has a keen sense of humor, enjoys music, chatting, and stories.

Pavitra is 8 years old. She is mobile, but her gait is affected since she has right side hemiplegia. She can only use her right hand and arm as support. She is a happy young child, loves to run about

and loves dancing. She has learning disability. She finds it difficult to read, but is a good auditory learner.

Badri is 9 years old, he is nonverbal and a wheelchair user. He can communicate very effectively, with a communication chart. He has learnt to read, he spells out words that are not on his communication chart. He looks forward to taking the school leaving exam.

Prem Kumar is 6 years old; he has learnt many concepts and is getting on to some reading. He has mental retardation and is a wheelchair user. He has good hand function.

Rakesh is 10 years old, wheelchair user, and a bright intelligent young boy. He has hearing impairment. His hand function is not good enough for him to learn sign language. He is, however, managing the grade 5 syllabus.

All these examples seem very complex and difficult by their description however much is possible with students with cerebral palsy with just a few inputs.

Cerebral Palsy and Its Implications

In order to understand the issues involved in creating appropriate, facilitative educational environments within the regular educational system, we need knowledge about cerebral palsy and the ways in which it may affect a person's development. However, it is essential to believe that the individual comes first and then his or her disability and not the other way round. Therefore, knowledge about cerebral palsy should result in increasing sensitivity, initiating appropriate, and suitable interventions, working for the realization of the individual's rights instead of being clouded in pity and acts of charity.

Cerebral palsy is a condition that occurs as a result of damage to the developing brain, particularly to the motor areas controlling coordination, posture, and balance. Since this damage takes place before, during or soon after birth, other areas of the brain may also be affected. This may result in the child with cerebral palsy having multiple disabilities. Together with physical difficulties, the child may have associated difficulties in the form of sensory impairment, speech, and communication disorders or learning difficulties. There is a high incidence of epilepsy in children with cerebral palsy and treatment with anti-convulsive drugs can have "side-effects" that have a negative effect on the child's potential to learn. Even the physical disabilities differ from child to child. Children with the spastic type of cerebral palsy are very stiff while those with athetosis have uncontrolled, in-coordinated bursts of movement. Those who have *ataxia* have difficulties in balance. The extent of difficulties may differ from child to child as well. One child with cerebral palsy may be mildly affected and be able to talk and walk while another may be very severely disabled with no independent mobility. Although persons with cerebral palsy have often been described as "having an intelligent mind in an

> Early referrals to physiotherapists or occupational therapists trained in the management of cerebral palsy are essential so that they can take a holistic view of the child's developmental needs and pool in the resources of special educators, speech therapists, and family counselors where available.

disobedient body" this is not wholly representative of the entire population as a large percentage of children with cerebral palsy have varying degrees of intellectual impairment ranging to mild to profound. Thus, under the label "cerebral palsy" there are a host of different challenges that have to be met and the saying "no two children with cerebral palsy are alike" is not far from the truth. Cerebral palsy is not progressive or hereditary but if left untreated, the child or person's difficulties can become more complex and the potential for management and learning may be reduced. Therefore, as in the case of other disabling conditions early diagnosis and intervention is the key to management.

Since cerebral palsy is primarily associated with difficulties in movement, the caregiver usually notices the baby's physical difficulties in holding up her head, rolling over, sitting, standing or walking. As the child grows other difficulties may become evident to caregivers. These may include a lack of response to visual and auditory stimuli, the absence of babbling or the inability to speak. These lead to major emotional upheavals within the family and often precious time is lost as the family struggles to come to terms with the child's difficulties and seek help. In places where a multidisciplinary team is not available, whichever professional the family consults must take a integrated holistic view of intervention and look at the child as a whole person with physical, sensory, cognitive, and communication needs that have to be met. This is the greatest challenge of a condition that results in multiple disabilities and anyone who works with children and adults with cerebral palsy needs to recognize the complexity of the needs.

Early Intervention

Right from infancy, management of cerebral palsy is geared to maximizing opportunities for the individual to participate in the activities of daily living along with other family members and making it as easy for the caregiver to meet the child's special needs within the daily routine of the home. Therefore, working on the child's posture and positioning for activities of daily living with the help of simple, adapted furniture, are priorities in management. Alongside, emphasis must be placed on assessment of the child's communicative and cognitive status and encouraging the child to interact actively with the environment and provide stimulating early learning experiences that facilitate all-round development.

Support for parents and families to cope with their child's disabilities, their sense of denial and disappointment, the anxiety, the fear of the future, the tendency to be overprotective is essential, so that positive steps for education and management may be taken. It is important to always remember that each person with cerebral palsy has the potential to learn and the aim for education remains the same as for other children. The vision, the aim is expressed succinctly in UNESCO's "Education for All" (EFA) document: "At the heart of Education for All is the vision of every person—female and male, in every community—engaged in learning, the key to unfolding their full potential as human beings."

The Challenges

Positive Attitudes and a Commitment to Whole-school Reform

The key to inclusion lies in a commitment to making inclusion work and in seeing it as being essentially enriching and beneficial for all students and not just the student with disabilities. It also comprises a process of positive changes that makes the school as a whole a more stimulating and effective learning space for all students and not just the student with disabilities. This involves making changes to existing systems, perhaps breaking away from traditions and radical shifts in mindset. It takes a long time and needs to be seen as an ongoing cyclical process of planning, activity, evaluation, and reflection.

Adaptations to the Physical Environment

Structural changes are by nature heavy on financial resources but if inclusion for students with cerebral palsy has to become a reality, environmental access is essential. The Disability Act recommends all new buildings should be architecturally modified to enable wheelchair access and this needs to be monitored carefully. In existing buildings, at least one toilet has to be modified and wooden ramps need to be put over steps if there are only a few. If there is a lift, the student with cerebral palsy must be permitted to use it and if there are many steps, the school must be prepared to spare auxiliary staff to carry the wheelchair to the upper floors.

Parents have to be permitted to arrange for the special chair and table or a wheelchair with a fitted tray for classroom use. If the student needs a special seat in the toilet, that too, needs to be organized.

Physical barriers in the school environment hinder access for children with difficulties in movement.

These include narrow doorways, classrooms in upper floors, lack of ramps, slopes and lifts, and inaccessible toilets.

Seating, Aids and Appliances

Since cerebral palsy is always associated with difficulties in postural control and coordination, students have to have appropriate furniture that enables them to function to the optimal level. It also provides a feeling of security and comfort and reduces physical fatigue.

The use of mobility aids like crutches, K-walker, a chair with casters or a wheelchair must be permitted by the school. Equally important is to set up linkages with physiotherapists and occupational therapists who advise about seating and other aids and appliances on an on-going basis.

Adaptations to the Curriculum

Curricular access is rendered impossible with the emphasis on written work that makes it difficult for students with cerebral palsy with poor hand function. Even students like Deepa whose hands

The school needs to consider both granting of extra time for written work and provision of "writers." Discussion with parents about teaching keyboard skills in the school or outside leading to the use of a typewriter or a wordprocessor should be initiated right from the junior classes.

"look" alright are likely to have fine motor difficulties that affect legibility and the speed at which they are capable of writing. Another important curricular factor is the type of written work students with cerebral palsy are required to do. Students with poor handwriting as a result of cerebral palsy find it difficult to answer long essay-type questions and the use of worksheets requiring multiple-choice, true-false, filling in the blanks and other objective-type responses are equally effective in gauging comprehension of taught material. This implies extra work for the teacher but if education for all is a belief and the guiding philosophy, these individual needs are required to be met within the school. Equally important is to set up linkages with special education teachers and qualified social workers who can give on-going advise about all aspects of curriculum planning, delivery, and support including the critical aspects of personality development and emotional well-being. Their input is valuable for ALL students in the school including the student with cerebral palsy.

Pedagogic Support

While a resource room is useful for one-to-one teaching, there is always a danger of the student with cerebral palsy with reading, writing or other academic problems remaining isolated in the resource room throughout the school day. This is not inclusion and therefore, support for learning problems must be provided within the classroom apart from special sessions in the resource room.

An important consideration in curricular adaptation centers around the provision of support teaching for any specific learning difficulties the student may have in reading, writing, spelling, mathematics or other subjects. As usual, early identification and intervention provides the best prognosis for improvement. Although the nature of assessment procedures may be qualitatively different from the usual normative procedures used in schools. Intervention for specific learning difficulties does not imply the use of methods that are any different from what the teacher uses to teach other children in the class. Once the student's specific strengths and needs are clearly defined, measurable objectives are set with a definite time-frame and the teacher uses the time-tested and clearly effective methods that she uses to teach other students but in a small group or a one-one situation. However, the issue of where "support teaching" is provided remains an issue. The use of child–child approaches, in which peer support complements the support given to students who have specific needs, have been found to be both good for the students who give help and for those who receive it. It inculcates a spirit of sharing and community participation that helps develop social and moral values.

Augmentative and Alternative Communication (AAC)

A large proportion of children with cerebral palsy have complex communication disorders and less than functional speech. As communication is a basic human right, in order to remove the barriers to participation posed by the inability to make oneself understood, augmentative and alternative

forms of communication must be used. It includes facial expressions, gestures, signs, body movements, visual displays using pictures, symbols and words referred to as low-tech systems and hi-tech computer-based communication systems with voice outputs. The field of AAC is multi-disciplinary and needs a team approach that involves parents, the child herself, speech and language pathologists, special educators, physio, and occupational therapists. The job of the team is to assess and intervene for children who have delayed or distorted speech, provide a need-based AAC system and support the child and the family to effectively use the system. Assessment has to be on-going as communication needs change and competencies are increased. Indian Institute for Cerebral Palsy (IICP) is a highly specialized AAC resource center with qualified staff who conduct regular training programs and have developed a range of teaching and learning material not just for AAC but also for managing all aspects of cerebral palsy (see details at the end of this chapter).

The only way in which mainstream schools can meet the needs of non-speaking children with cerebral palsy is to build up linkages with specialist centers that have staff qualified to advise on AAC.

It is essential that the school establish linkages with a support team of professionals who have the knowledge, skill and experience of assessing students with cerebral palsy and planning strategies for management.

Issues Relating to Assessment

Since cerebral palsy is associated with multiple disabilities, the most critical aspect of assessment is to use a holistic approach. The student has to be viewed as a person in entirety and strengths and needs in all developmental areas must be taken into account. These include physical, sensory, language, communication, social, emotional, intellectual and for older students, vocational needs. These professionals need to guide the school authorities about special furniture, means of enabling physical access, special facilities and curricular adaptations that are necessary for the student to participate as a member of the school community.

Assessment for Specific Difficulties in Academic Learning

This is relevant and appropriate when there is focus on criterion-referenced indicators emphasizing what is required for a particular task, checking which of the required skills the student has mastered and the skills that need to be learnt. There may be times when a standardized test focusing on general abilities may be necessary. There are two areas of concern. First, most tests include a performance score and a verbal score. This may mask the accurate assessment of many children with cerebral palsy with limited hand function, nonspeaking or with both difficulties. Even a widely used culture-nonspecific test like the Raven's Progressive Matrices, which does not weigh heavily either on hand function or verbal responses, has to be used with a certain degree of caution. Children who have motor difficulties and limited motor experience

These include an extra 20 minutes time and the provision of a writer. However, the duration of extra time seems to be arbitrarily sanctioned and is often insufficient if the student with cerebral palsy has severe speech difficulties or very slow handwriting.

with poor motor planning and organization as a result of brain damage often have specific difficulties in spatial awareness and spatial relation. Therefore, a test that comprises whole vs part analyses in the context of geometric figures is often not a wholly reliable or valid assessment of the ability/potential of children with cerebral palsy.

In order to assess a student with cerebral palsy, checklists and teacher-made tests related to literacy and numeracy developed by the IICP and other spastics societies are far more dependable if an accurate assessment is needed and linkages need to be set up for purposes of advice and guidance. Second, if a standardized test is used the tester has to administer the test in a way that takes account of the student's particular difficulties but that makes scoring according to the conventions specified in the test difficult. So although the tester may use a standardized test she must be aware that the purpose would be to get valuable qualitative information but scoring is difficult and the derivation of a mental or reading age may not be wholly accurate.

Examination Concessions

All major boards of education have agreed on concessions for students with physical disabilities. Unfortunately, some of these concessions appear to have been arbitrarily decided. For example, some boards insist that the "writer" be from a junior grade level and this is both frustrating and tiring for the candidate (and the writer). Concepts and vocabulary are unfamiliar to the younger writer and this leads to frequent errors and corrections and has an effect on the performance of physically disabled students particularly those with slurred, unclear speech. It is essential that dialogue with the examination boards must start at least two to three years before the examination so that each student may be taken up a separate "case" so that individual difficulties are considered within the overarching concessions given for the evaluation process.

Steps in Preparing for Inclusion

A recent publication by UNESCO (2002) describes processes and outcomes of pilot projects in inclusion in 11 developing countries. Certain factors emerge across the country reports as being positively associated with successful inclusion of students with disability. The following appear to comprise the key to success:

- Selection of schools in which inclusive policies and practices may be tried and tested and discussions with teachers so that they are a part of the planning and preparation process, they can voice their doubts and address possible solutions.
- Upgrading teaching resources and training material linked to inclusive education, making them accessible for all teachers to use as guidelines, and conducting training about pupil diversity and disability.

- Careful preparation for inclusion so that the special needs of the disabled student can be met in the school in relation to accessing classrooms, the library, play and toilet areas, extra support in the classroom, extra time for assignments if necessary.
- Community linkages for increasing the scope for involving parents and other community members in school programs and networks can be established with other schools in the neighborhood.
- Explicit prioritization of inclusive education at all levels of governance including the municipal authorities, *panchayat*, and block levels.
- Setting up of monitoring and evaluation procedures in consultation with the school and deciding on measurable and qualitative indicators of achievement.
- Sensitization for other students and parents about children with disabilities, their strengths, needs and limitations, breaking down myths about disability and encouraging child–child programs.

Let us discuss these factors that are associated with success in the context of a case study.

Barish was 16 years old. He had cerebral palsy and although he could walk, his gait was awkward. He had slurred speech and uncontrolled movements associated with athetosis. His favorite subject was English literature and he wrote poetry and prose with fluency and flair. He used to attend a special school and had appeared for his 10th grade board examinations (Indian Certificate of Secondary Education Examinations) as a private candidate. The examination board had allowed a therapist to write for him and given an extra 20 minutes per paper. He scored a high second division and was very keen to transfer to the community mainstream school for his 12th grade course of study. He spoke about this to the Principal of the special school. She agreed it was a good idea but also felt it was her duty to warn Barish that inclusion was still in its infancy, therefore, even with effort and good intentions there was a possibility that he could be disappointed. However, she wasted no time and contacted the Headmaster of a school that had close linkages with the special school and asked for a time to meet him. During this meeting she spoke about Barish, his achievements, and his aim for higher studies. She handed over a detailed profile of Barish based on current assessment with a photograph. She also conveyed her conviction that he would have no difficulty in adjusting to a mainstream school and offered her ongoing support for whatever difficulties arose as barriers to Barish's participation in the school community. The Headmaster listened with care but asked for a little time to think about the proposal carefully and talk to his colleagues. He called a meeting of all the departmental heads and asked them to go through the profile. He also said that he was supportive of the idea and had the faith in his colleagues that they would be positive in their attitudes and hoped they would consider the case for admission with objectivity and fairness. He fixed up a date for the next meeting and said that he would inform the Principal of the special school of the decision. He contacted the board, spoke to them about Barish and also mentioned the context of the Disability Act and the need for inclusion. The board members were skeptical but not avidly opposed to the idea. The head of department of the 12th grade section was very open to the admission being granted. Once the decision had been conveyed to the Principal of the special school, two moves were made simultaneously.

First, an orientation and training day was organized for the whole staff of the school by a senior member of the training faculty of the institute that the special school was a part of. A film was shown and a senior student with disabilities spoke about the need for inclusion. A participatory workshop followed including group activities and focused group discussion on what constituted barriers and what whole-school approaches could be tried out. There was a debate on the shift from a totally within-person approach to disability to a more social definition that looked at the environment as a potential powerful source of compensation. Peer-tutoring and other child–child approaches were discussed and training material developed at the institute was shown and a catalogue was left for information and future reference.

Second, Barish and his parents were called for an interview and while Barish answered papers in English and History written by his father, the English and History teacher observed. Then the Headmaster asked Barish how he would cope with teasing, if any, pushing and shoving particularly on staircases. Barish's answered simply that he was used to negative comments and that he was sure they would stop after a while, and that he would have to wait a while when there was a crowd and needed a little extra time to reach if there was a change in the classroom. The Head explained that the 12th grade department was on the second floor of another building, there was no lift but he would be exempted from school assembly so that he could be in class on time. Barish was a little upset about this but kept quiet. When he reported back on his meeting, the Principal suggested that Mr G, the therapist should visit the school with Barish to help check out the toilets, steps, and other environmental aspects that could cause a problem and spoke to the Headmaster about this. This was done and two decisions taken. One was to have a wheelchair in the school so that Barish could be wheeled across to the 12th grade section by his friends after assembly every day. The other was that a railing would be placed on one side of the staircase with four steps leading to the toilet.

The day before Barish started school the Head of the 12th grade section had a meeting with the house captains and vice-captains. He told them it was their responsibility to see that Barish would settle into school and that there would be no bullying. He also called in one of the most popular "all-rounder" students of the Arts department and assigned the responsibility of sitting next to Barish for one term. The day Barish joined the school the Headmaster spoke to the students as a whole. He made a statement that the school was happy to welcome Barish and he was confident that Barish would have two very happy years as a student of the school and as a representative outside the school.

It has been two months since Barish joined school. He is happy, still settling down to the more rigid rules and conventions of a "big" school. There have been a few teething difficulties. One was the time taken to climb the stairs during the rush but now there are a few "criers" who go with him and tell people to move aside and give place! Second, there was a problem about joining the clubs. Barish was keen on dramatics but it was full and since he had never been refused anything in his old school he was angry and felt he was discriminated. His father came to request the Headmaster for a special concession and was refused as this was not an adequate reason for any concessions on the ground of disability. All students had to give three choices and did not always get their first choice. The Headmaster called Barish in and this time he was not sympathetic. He spoke about personality development, maturity, the importance of not using disability as a crutch and the need for courage to accept the fact that you don't always get your first choice. He also spoke to Barish's

ex-Principal and she asked her colleague who had been Barish's counselor for a long time, to quietly have a word. The matter has been resolved and Barish has joined the Social Service group after it was pointed out that giving service was as important as being a recipient of services!

The term examinations are scheduled and decisions about writers will have to be taken. However, the Headmaster and his parents have had a discussion, the Headmaster is in touch with the special school and together they will work out adequate support.

It has been said that inclusion is a process, an understanding, a reflection of societal values. In the words of Sai Vayrynen, "Inclusion does not happen in a vacuum, nor does it happen after issuing an administrative order. Inclusion is profoundly a process that engages the whole community in a process of change. Inclusion in education has to be seen within the context of the society—it is hard to see it happening if the society is overtly discriminatory, segregative [sic] or xenophobic." However, education has a role to play in the development of a more just society. As the International Commission on Education for the Twenty-first century articulates it: "Education cannot, on its own solve the problems .... It can, however, be expected to foster the desire to live together ...."

FACT SHEET 1

What is Cerebral Palsy

Cerebral palsy (Cerebral = "of the brain", Palsy = "lack of muscle control"), is a non-progressive condition that affects about 1 out of every 500 individuals living in India. Cerebral palsy (CP) is a term used to describe a group of disorders affecting body movement and muscle coordination.

Development of the brain starts in early pregnancy and continues until about 3 years of age. Damage to the brain during this time may result in CP. This damage interferes with messages from the brain to the body, and from the body to the brain.

The way CP affects each individual will vary widely from individual to individual, depending on where the brain was damaged.

Cerebral palsy is

- a condition, NOT a disease
- not hereditary
- not contagious
- non-progressive
- a life long condition
- not life threatening
- Children with CP have a normal life expectancy
- CP affects 2 to 3 out of every 1,000 children

Characteristics of Cerebral Palsy may Include

- Lack of coordination
- Spasticity
- Muscle tightness or spasm

- Involuntary movement
- Different walking patterns
- Speech impairment
- Difficulty with gross and fine motor skills
- Abnormal perception and sensation

Facts

- The incidence of cerebral palsy is approximately 2 to 4 babies for every 1,000 births.
- Premature infants have a slightly higher rate of cerebral palsy—around 1 percent.
- In over 90 percent of cases the damage occurs before or at birth. Probably the most common cause is *cerebral hypoxia* (poor oxygen supply to the brain).
- Many affected children are also affected mentally, although a proportion is of normal or high intelligence.
- Currently about one in every 400 children is affected—i.e., around 0.2 percent of children have some form of CP.

Causes

Cerebral palsy is the broad description of a physical impairment, which affects motor functions (movement). The actual cause of cerebral palsy is not known although it is usually the result of a part of the brain being damaged or not developing properly, either before or during birth or in early childhood. Other causes of CP include blocked blood vessels or a head injury resulting in *subdural hematoma*.

- Possible causes before birth include maternal infections (especially German measles/rubella), radiation, anoxia (oxygen deficiency), toxemia, and maternal diabetes.
- Causes at the time of birth include trauma in delivery, anoxia, prematurity, multiple births (especially for infants born last in a multiple birth), and a lack of oxygen during birth.
- Causes during infancy include brain infection, viruses (e.g., meningitis or encephalitis), head trauma, anoxia, brain tumor, and cerebral vascular lesions.

Types

Cerebral palsies are divided into four groups. The three main types correspond to injuries to different parts of the brain.

- Spastic—around 60 percent. Causes the muscles to become very stiff and weak, or even paralyzed more so when they are being extensively used (i.e., during sport). Spastic cerebral palsy may be in the form of hemiplegia, which affects all four limbs equally, or diplegia, which affects the legs to a greater extent than the arms.

- Athetoid (also known as Dyskinetic)—20 percent. This causes a lack of posture control and a tendency to make writhing, involuntary movements. Such movements often occur in parts of the body furthest from the torso (i.e., feet, lower legs, arms, and hands) and may also affect the trunk itself. Jerky movements can also be seen in some cases, resembling the movements of children with chorea. It is possible that these movements may disappear during sleep and it is almost always the case that they increase under tension.
- Ataxic—approximately 10 percent. Involves problems with balance and coordination. They may also have shaky hand movements, tremors or irregular speech.
- The remaining 10 percent of children with cerebral palsy have a mixture of these three strains.

Defects in vision and hearing, convulsive seizures, and mental disabilities may be present in any of these types and a mixture of types or a mixture of CP with other disabilities is common.

Effects

The main effect of CP is difficulty in movement. Some children with CP are hardly affected, others have problems walking, feeding, talking or using their hands. Some children are unable to sit up without support and need constant assistance. A common finding with children who have CP is spasticity (increased muscle tone/reaction), which may affect a single limb, one side of the body (spastic hemiplegia), both legs (spastic diplegia) or both arms and legs (spastic quadriplegia). Children with CP often have difficulty controlling their movements and facial expressions. Therefore speech difficulties are common and seizures may occur. An important point that has to be made is that cerebral palsy is NOT a condition that can be contracted or inherited.

FACT SHEET 2

Treatment and Management of Cerebral Palsy

As CP is a condition, there is no "magic cure," but we do know that the correct treatment from an early age can ease the effects of CP. Abilities need to be recognized and developed to the fullest—as much stimulation as possible should be offered, and simple, loving patience must always be shown. Children with cerebral palsy must be taught to develop maximum independence within the limits of their individual physical capacities. It may not be detected immediately at birth—it can take up to two years for CP to be fully diagnosed. Occasionally children who appear to have CP lose the signs as they get older. Drugs can sometimes be helpful to treat related problems; for example, seizures can be controlled with anticonvulsants. Physical therapy is needed to teach the person with CP how to develop muscular control and maintain balance. Problems with speech can be helped greatly by speech therapy. For children who cannot speak at all, sophisticated techniques

and devices have been developed to teach them how to communicate non-verbally. Occupational therapy, the use of braces or other mechanical devices and orthopaedic surgery may all be of great benefit. Most importantly, having cerebral palsy does not mean that someone cannot lead a full and independent life.

This is a brief overview of some of the available options.

Therapy

Physical therapy (PT)

Physical therapy aims to help children achieve their potential for physical independence and mobility. It includes exercises, correct positioning, and teaching alternate ways of movement such as walkers, bracing or handling a wheelchair.

Occupational therapy (OT)

Occupational therapy designs purposeful activities to increase independence through fine motor skills. It help children to use adaptive equipment such as feeding, seating, and bathroom aids.

Speech therapy (ST)

Speech therapy aims at improving communication. A child may only need help to overcome a slight articulation problem, or she may not be able to communicate verbally and may require a non-verbal communication system. Alternative communication systems include eye-gaze systems, blis symbol boards, and electronic voice synthesizers.

New therapies are being developed all the time. For example, music therapy, which uses music for the treatment of neurological, mental or behavioral disorders.

Orthotics, Casts, and Splints

Most children with CP will be prescribed orthotics, casts or splints to supplement their therapy programs. These should be custom-made for the child and help provide stability, keep joints in position, and help stretch muscles.

Medications

A child may take medication for conditions associated with CP, such as seizures. Drugs may sometimes be prescribed for severe spasticity or painful spasms. Spasticity can be temporarily reduced by nerve blocking injections. A recent development is the injection of botulinum toxin (Botox) into a spastic muscle group. This can reduce tone for several months.

Surgery

Orthopedic and soft-tissue surgery can help counter the damaging effects of spasticity on the spine, hips, and legs. Surgery can lengthen or transfer tendons, enabling the child to move more easily. When the child has finished growing, bone surgery may help reposition and stabilize bones. Neurosurgery involves surgery on the nerve roots, which control muscle tone. Selective dorsal rhizotomy (SDR) aims to reduce spasticity by severing some of the nerve roots in the spine.

Adaptive equipment

An enormous range of aids and adaptive equipment are now available for children with disabilities.

Educational Supports

Many children with CP will also have some type of learning disability. Assessment by a psychologist and the support of special educators can reduce the handicapping effects of a learning disability. Most children with CP will receive an integrated education enabling them to mix with their peers in their neighborhood school. The amount of support offered, and the commitment to successful integration, varies widely between school boards and individual schools. A good partnership between parents and educators will help children achieve their goals.

FACT SHEET 3

Low-cost Teaching Aids

Learning is based on experience. Just as a child who has hearing impairment has poor language, because of less language experiences, a child with cerebral palsy has less motor experiences. In early childhood, this plays a crucial part as most learning especially conceptual learning is based on motor experiences. This lack of motor experiences may affect the learning of a child with cerebral palsy.

However, over the years it has again and again been demonstrated that only physiotherapy does not help and a child, like any other child, must have holistic inputs and varied learning experiences in all areas.

- It is generally believed that physiotherapy for children with cerebral palsy is very complicated; however, many good therapists have transferred the skills effectively to parents (of all literacy levels). They manage to give excellent inputs throughout the day at home.

- Therapy sessions of 40 minutes a day is not enough, unless correct movement patterns are encouraged throughout the day.
- Positioning and carrying patterns are extremely important; therapy goals can be achieved by correct positioning itself. It is also very important that a child with cerebral palsy experiences movement and the correct pattern is facilitated and is not "carried" all the time.
- Therapy does not mean that a child will achieve normal motor functions. The aim is to support a child to achieve as much of motor independence as possible.

Rules in Development

As is true for all children, so too for children with cerebral palsy—development proceeds along a set format, along a set path and on a set sequence. Thus, all motor development is:

- Cephalo-caudal—that is development will always starts from the head and move downward.
- Proximo-distal—that is development occurs closer to the body first along the spine–trunk–shoulder then elbow–wrist–hands.

Positioning and seating

Positioning and seating are most important for a child with cerebral palsy. The equipment need not be expensive. In fact very low-cost adaptations can be carried out if the principles that govern poor motor-control in children with cerebral palsy is understood.

Whether seating is on a floor seat or a chair, the following should be kept in mind:

- The trunk if needed should be well supported.
- Feet should be flat, or during long periods of immobility the feet should have a splint or support so that they are 90 degree to the legs.

If the child has good sitting balance then an ordinary chair or floor can be used.

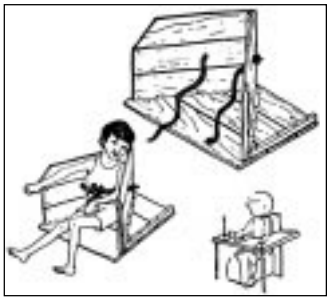
Mobility aids

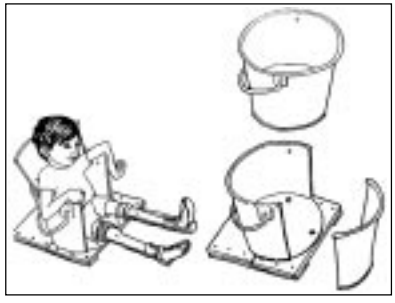
Some children may need a wheelchair (if they have no walking ability) or a walking aid—like rollator, crutches, or walker. Many wheelchair users are home or indoor walkers and that must be encouraged. Peers and classmates can be encouraged to help the student to move from place to place. We have found that this fosters friendships.

Gross and Fine Motor Development

These can be achieved by simple activities and exercises in the playground and indoor activities.

This corner seat is portable. It has a broad base to help prevent tipping. Check with a medical adviser before fitting a restraining strap.





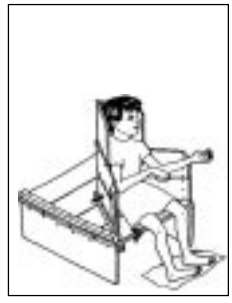


Figure 10.1: How to make simple disability aids

- Gross motor—Larger body movements like sitting, standing, walking.
- Fine motor—Hand function smaller movements like writing, cutting, stitching, etc.
- Hand function—Many children with cerebral palsy may not have good fine-motor function. Thus, they may not be able to write or tie their shoelaces. They may need either an assistive device like a thicker pen, or a stamp pad, or a typewriter or computer to key-in the answers instead of writing them in the conventional manner.

While teaching hand function, the most important point to keep in mind is trunk control. If needed it should be well stabilized with the right size of chair or cushions. For activities like writing, beading, cutting, etc.—stability of trunk, shoulder, elbows and wrist must come before any activities are taught.

However, many students are able to write and type, but are slow and hence need support in the classroom and a scribe during examinations. For all other hand function activities also adaptations can be made. In most cases a larger diameter and a longer handle suffice.

- Toothbrush
- Comb
- Knife
- Tumbler with handles

These can be made with Plaster of Paris or any other material depending on the creativity of the teacher and the peer group. This can form a topic for the Class Project in Craft or Design Technology.

Sensory Areas

Most children with cerebral palsy may have an associated condition of vision or hearing loss. The chapters on vision and hearing impairment will give many ideas and strategies on how to give educational inputs for these special needs.

Some Suggestions

As there is damage in the central nervous system, many children have immature senses—which do mature with multisensory experiences in the environment. For example, encouraging a child to move and play with peers encourages experiences in space and spatial relations, and eye and hand activities. Many children may have a squint, or nystagmus, which could be surgically corrected. Many visual perceptual problems, that young children exhibit, are sorted out, as they start leading an active life and having many environmental experiences.

- Play and movement must always be encouraged for a child to have mastery over the environment.
- Simple visual and auditory training exercises help a child overcome some of their problems. Peers, siblings or parents must be taught these and encouraged to do them with the child, e.g., (*a*) encouraging a child with low vision to follow a large object; (*b*) encouraging a child with hearing impairment to learn lip reading.

Speech and Communication

The speech and communication faculties of children with cerebral palsy suffer from understimulation as they receive very few opportunities to carry on a sustained conversation with children since not many people speak to them, especially since they look so severely disabled that people assume that they have nothing to say. And of those who do very few wait for a response.

Waiting for a response, is the much talked about patience you need with children with disabilities. *Everyone must learn to wait*. Many "nonverbal" children also respond with a "yes" and "no" response. They may use different parts of their body to communicate. Teachers, peers, and relatives must learn their way of response. Children use hands, eyes, or a nod of their heads.

Many may have speech impairment or may have a "time lag" in response and some may even be nonverbal. However, all of them want and need to say many things.

"Nonverbal" children may need other augmentative methods to communicate like a picture or word chart. The whole area of augmentative and alternate methods of communication is vital for nonverbal children. They could communicate for charts that could be designed especially for them. When designing a chart remember that it must be:

- Portable
- Easily understood by the listener
- Dynamic
- Mode has to be child specific.

Charts could be

- With pictures
- With symbols
- With words

It is important to remember that the child needs to be positioned correctly, which will enable her to communicate effectively.

Speech therapy can carry on throughout the day!

Many teachers do not like to work with children with cerebral palsy because they drool. A child has to be trained not to drool—by teaching that the mouth is to be kept shut and frequent swallowing. Many aspects of speech therapy can be addressed at the time of eating because the most important needs are mouth closure, chewing and swallowing. Good eating practice is an integral part of speech therapy.

Cognition

Cerebral palsy is classically described as an intelligent mind caught in a disobedient body. Many students with cerebral palsy have very good cognitive abilities. Very often they get left out of the school system, though they need only some physical adaptations to cope with the school curriculum. Most often these are:

- An adapted seat
- Writing aid (adapted pencil, typewriter, computer)
- Mobility aid (wheel chair, rollator)

Some students may also have mild, moderate, severe or profound mental retardation.

FACT SHEET 4

How Inclusion Helps

When we talk about cerebral palsy, very often the word "suffer" from cerebral palsy is used. Well, they certainly "suffer" or are "oppressed" by two very major facts:

Social Isolation

Making and keeping friends is a very big problem for children with cerebral palsy. Since disabled children have been isolated for so many years, nondisabled children find it difficult to communicate with them and to have a sustained relationship. Thus it is important for both sides to be aware of the others' needs and to be made aware of the etiquette of interactions.

Low Expectations

Somehow people think that if a child cannot walk or see or hear, that they cannot think or make decisions or take charge of their lives.

Consider the following examples:

Rajeev is a young man with cerebral palsy, a wheelchair user with difficulties in writing. Till 14 years of age he was at home till he reached a special school, which helped him to take the school-leaving exam with just six years of schooling. He then went on to a mainstream school for his 12th grade and then to graduate from a leading college. Today he heads the advocacy cell of an NGO and is contributing to the disability movement.

Vishnupriya, Dhanasekar, and Siddharth—youngsters with cerebral palsy—originally from a special school, in middle and high school attended a mainstream school and now are active college students.

Low Self-esteem

It is commonly observed that even parents, siblings, and other family members tend to feel oppressed by the fact that they have a disabled child in their home. They think, perhaps it is due to their *Karma* or a divine punishment. It is extremely important that disabled children and their families are helped to look at their strengths and weaknesses and have a higher self-esteem.

Pedagogy and Inclusion

Though a description of cerebral palsy, may seem as if the students are very difficult to include, it has been found that most of the times the so called severely disabled students are more successfully included. Many students termed "mildly disabled" especially with learning and emotional disabilities are the ones who find it most difficult to cope in traditional classrooms.

For inclusion it is most important that we focus on the classroom organization and the teaching methods.

A few suggestions for teachers to consider:

- It is generally believed that children learn more from each other, than from the teacher. Do you agree? Combined work and study produce good results.
- To teach any topic, it is good to first find out how much the students know—than to assume they know nothing.
- Child centered or cooperative learning methods are the most productive.
- Nothing can replace experiential learning.
- Even if a child cannot take the school-leaving exam, it is valuable for her to be part of the classroom.
- All learning happens from: the simple to complex; the concrete to abstract; the known to the unknown.

Jayanto and Shubro

The key to learning is opportunities presented at the appropriate moments and in an appropriate setting.

Jayanto and Shubro proved this statement. They were both around 4 years of age and had cerebral palsy (CP). Shubro was more severely affected in his loss of gait in the upper torso. For most of the time he had to be strapped into his remedial chair from which he hung, quite like a broken doll, all day long.

Jayanto was affected to a lesser degree and was able to sit up on his own and did not need those stirrups. Between the times when they had teachers, these two would droop and start drooling with boredom and the effort of sitting up in their chairs.

I do wonder why CP children need to be strapped into remedial chairs for so much of the time. When they are taken out of these chairs and allowed free movement on mats they seem so happy and mobile. I would often drive them out of their hard little wooden chairs and plonk them onto their wheelchairs and take them up to the library, which was a great sunny room. Here they would romp all about the clean, tiled floor, full of curiosity about the books arranged so attractively in low bookshelves. There was no broken fragility about these children now. I also felt this free movement would be good for their blood circulation and their weight control. (I could see that already at 11, Shubro was running to obesity.)

Jayanto and Shubro were supposed to be writing. However, neither had much fine motor control in their hands. My common sense told me to give them play dough to work with, finger painting to mess with, water and sand to run their fingers through.

We started with play dough, which I mixed from *maida*, oil, salt, water and local *rangoli* colors. The two boys were fascinated. They rolled and stretched and squeezed and pinched the dough into all sorts of shapes to express their imaginations. When I gave them little palettes of paint and dipped their fingers into the color and told them they can streak color in any way they like, they were delighted. They streaked away with their fingers, blotched with their whole hands in the paint, held their hands up to each other faces, and laughed at the color and chaos around them.

There! Their hands were obeying their commands, their arms were hinging up from their elbows and drawing their hands across the air, the fingers at the ends of the hands were playing with each other and each finger was separating their functions from each other.

I tried to give Jayanto and Shubro as much normalcy as possible. One day we arranged to take them to a cricket match at the famous Eden Gardens. Off we went in a taxi. The taxi driver was quite overcome by his young passengers and decided to join us and watch the match too!

Jayanto and Shubro's families were especially participative in our efforts. I took the mothers upto the library and showed them the books they could read to their children. Besides the collection of children's books in English, I also suggested that they read out Bengali children's literature to them. Bengali children's literature is rich, imaginative, and charming. I have always suggested to parents that they read stories in their mother tongues, because I feel this helps to bond the learner to his roots, respect his own culture and in this way respect the cultures of other people too. Special needs children are no exception to all the learning needs and goals of other children.

Several years later both Jayanto and Shubro were admitted to a small local school and are to appear for the grade 10 examination. I do believe that their early childhood experiences were instrumental in part for this achievement.

Source: Supriya Dasgupta.

The Challenge of Getting a Writer

I am a person with cerebral palsy. I have had this condition since birth.

I studied in a special school till grade 10, after which the Principal of my school made arrangements with the La Martiniere for Girls, a regular school, for admission to 11th grade. I already knew some of the girls there who in just a couple of months became my very close friends. These friends never made me feel that I was different from them. They carbon copied the class notes. Initially the teachers were a little lost, as I required someone to write for me during the class tests. Later it was decided that I would stay back after school and some of the girls would be my writers. My teachers eventually developed such trust in me that they started sending the question papers home during the half-yearly and the annual examination so that my sister could be the writer. For the Board examinations, I received permission from the ISC Board to have a speech therapist and a physiotherapist as my writers.

In school I opted for humanities for my 12th grade. The subjects included Maths, Science, and Geography, which I had done for my 10th grade. I had exemptions from the Science practical. Unfortunately, in geography I was unable to draw maps and diagrams. I lost marks for that!

As for access, there might have been some difficulties for a wheelchair user, but I was mobile. My classes were held in the boy's school campus and after assembly in the girl's school we had to go round the entire boy's school field, and then climb a set of stairs to reach our destination. This seemed a bit hectic in the beginning but we soon got used to it. My friends always helped me. I went for school picnics, on outings, to my friend's houses for birthday parties and sometimes even spent the night at their houses. This continued for many years even after I left school. I was encouraged to participate in the inter-school festivals by both my teachers and my friends.

Through school I faced no difficulties; it was later in college that I faced the maximum problems. The main challenge was arranging for writers. I faced a lot of harassment during my graduation examinations when Calcutta University refused to allow a writer of my choice, as I required someone who was familiar with my speech. They refused to allow male writers in their campus on the pretext that it was a girls' college!

But all that is behind me now and I am presently employed as a social worker at the Indian Institute of Cerebral Palsy, Kolkata.

Source: Jeeja Ghosh.

11

INTELLECTUAL IMPAIRMENT

Madhumita Puri

The story of young Rachit still haunts my memory.

At the age of 12 years the boy had seen many ups and downs—mostly downs—and since it was in the prime area of schooling, it infiltrated its way in all the aspects of his school and home life.

A short-statured, thin, bespectacled, intense looking child with fingers always stained with ink, reminiscent of the hours spent with books and notebooks trying to solve equations that made no sense anyway, Rachit at first instance appeared to be like any other school boy.

His study habits could have been any parent's delight. He woke up in the morning and revised his lessons for the day. He came back home from school and headed straight for the study table to complete his home assignments. He went out briefly to play with some friends in the lane next to his house, as access to a park (he lived in a very congested part of old Delhi) would have meant wasting too much time. Thereafter he studied till about 8 pm, stopping to have dinner while watching TV and then went to bed. The next morning the entire drill started all over again, relentlessly, day after day with the only exception being sundays.

He was the older of two siblings. His mother, a postgraduate in mathematics was a homemaker by choice. She was well-informed and was keenly aware of the difficulties Rachit faced in school. She was aware of the difficulty he had in memorizing lessons, in the inordinately long time he spent on completing his work and the fact that school life always seemed like a train they had just missed—always a little ahead. She confessed that she felt powerless against the system, against the demands and expectations that the teachers, and family had of her and her son. She said that she was tired of listening to the teachers complain that Rachit did not work hard enough and that she did not pay attention to her son. She had tried many a time to ask the teachers to work on solutions instead of highlighting problems, but it seemed to be of no avail. She said that sometimes she would just hug Rachit trying to transfer all the energy she had to him.

Rachit's father was a busy businessman, with little time for his children or his wife. He provided for the family and did little else. Rachit's younger brother Rohan was quite the opposite of Rachit—robust, extrovert, and a good performer in examinations. He was two years junior in class at the start of his academic career and as the years went by, overtook Rachit. It was in grade 7 that Rachit was again asked to repeat yet another class and his brother was promoted—and that is when the real problem started!

All the latent aggression pent up within the boy came pouring out—in the playing fields, in the corridors when the boys teased him or when the teachers said that he did not study before coming to school. The school authorities immediately took action against this and sent a letter to his parents complaining of his aggressive behavior.

Rachit reacted with complete disobedience when his parents asked him to work harder. He went to sleep early and woke up late. He studied when he felt like (which was not often anymore). He played to his hearts content.

When asked as to what would happen if he neglected his studies in such a fashion, he stoically replied: "when I studied, I could not play and failed in my exams. When I will not study, I will be able to play and will still fail in my exams."

During that academic year, the school terminated Rachit's admission in the school. His parents were forced to place him in the special section located in a mainstream school. The boy became increasingly depressed, refused to go to the new school and a year later dropped out. He was home schooled and passed his school Boards from the National Open School.

What has haunted me all along is the powerful motivation and determination the child had—that went unnoticed by all. Attention was only paid to his performance and not to the path that he struggled to follow for so many years.

Surprisingly, the lack of effort and hence motivation is frequently brought up as an issue with slow learners. And perhaps this criticism is best viewed as the first step in a downward spiral of low self-esteem, helplessness, and hopelessness. School psychologists and educators have the power to interrupt some aspects of this downward spiral that leads to behavioral, social, and emotional problems. Experiencing repeated failure without learning what success can be or not having an academically successful role model are primary features in developing poor motivation. In other words, when there is no light to guide strong academic work habits or there is no goal or observable future, academic motivation cannot be sustained.

The policies of retention and the use of tests that work on the exclusion criteria often serve as barriers for continued academic motivation among slow learners. Elimination of grade retention and instruction, that involves the basics of direct instruction of material, scaffolding, and systemic review, can all lead to success. Successful children are likely to become academically motivated children. Academically motivated children are inoculated against the real risk factors of low intelligence and challenging environments. Increasing barriers by increasing grade retention and minimum score requirements for a test can reduce academic motivation and increase feelings of academic hopelessness.

Solutions within the Classroom

The special educational needs of the students have to be addressed and accommodated within the confines of the classroom. Primary to this being a successful venture, certain attitudes and beliefs will have to be the underlying feature:

- The teacher believes that the student can succeed.
- School personnel are committed to accepting responsibility for the learning outcomes of students with disabilities.
- School personnel and the students in the class have been prepared to receive a student with disabilities.
- Parents are informed and support program goals.

"Inclusion" assumes that with minimal assistance, a special education student will be successful in a regular classroom. This is true for some students, but certainly not all!

Who will Benefit

Before moving a student to the regular program, many issues must be considered when determining the best placement:

- Is the student on grade level or near grade level for everything? If it is so, and the student's behavior is appropriate, then inclusion is the best answer.
- Is the student on grade level for one or two subjects? If so, mainstreaming for only those subjects would be most appropriate if the student's behavior is not an issue.
- Is the student below grade level but able to help much younger children? If so, allowing the student to be a peer tutor will not only raise his/her self-esteem, it will also reinforce the basics for the student.
- Is the child so far below grade level that he/she cannot tutor; however, the student's behavior is good? If this is the case, this student can be mainstreamed for recess, lunch, art, music, and physical education.
- Is the student's behavior such a problem that it is extremely disruptive to others? If so, then this student may not be ready for inclusion, or may need to "earn" inclusive situations in his/her favorite area.

> Whatever you choose to do with your students, be sure that you choose that which is appropriate for each individual.

Nursery and Elementary School

One of the main reasons the child enters the play or nursery school is to understand and abide by social rules. The child with a learning difficulty, due to a variety of reasons—for example, parent preoccupation with the diagnosis and its implications, inadequate opportunities for socialization in the early years—may not have had a chance to learn social rules. This ability to behave and interact with others in a socially acceptable way and to understand and respond appropriately to the immediate environment is extremely important for progress in cognitive areas.

Key Areas of Socialization

- Becoming aware of the major routines of the day.
- Learning to participate and respond appropriately.
- Responding to verbal requests and instructions.
- Learning to take turns, share and give and take.
- Learning to line up.
- Learning the class and school rules, both formal and informal. Working independently and cooperatively.
- Developing friendships.
- Developing self-help and practical skills.
- Caring for others.

All children imitate their peers and use them as role models for appropriate social behavior and learning. This type of social experience, where other children set the standards for age-appropriate behavior and achievement, is vital for children with learning difficulties as they do not learn well from incidental learning and will not pick up conventions instinctively. Typically, they take longer to "learn the rules." Thus, the focus of additional help and support in the early years needs to be in this key area.

Modelling Behavior

There is a widespread belief that children with intellectual impairments are behaviorally disturbed. There are no behavior problems unique to such children. However, much of their behavior is related to their level of development, i.e., similar to those seen in children of a younger age, which at times may appear odd to the uninitiated.

Avoiding the Development of Maladaptive Behaviors: Classroom Strategies

- Ensure the rules are clear. Ensure all staff know that the child with learning difficulties must be disciplined at all times with the same expectations as for any child.
- Use short, clear instructions. Avoid long explanations and excessively complex reasoning.
- Understand the difference between "can't do" from the "won't do." Investigate any inappropriate behavior, asking yourself why the child is acting so.
- Does the student understand what is expected of them? Encourage positive behavior by a system of simple rewards, like being made the Monitor for the day.
- Ignore attention-seeking behavior within reasonable limits: it is aimed to distract.

Structure and Routine

Children as a rule thrive on routine, structure, and clearly focused activities. Unstructured and informal situations are often difficult for them. Develop within the class setting:

- A system of teaching all new students about timetable, routines, and school rules explicitly. Stick to routine as much as possible.
- For the very young or the intellectually impaired provide visual timetables: use the printed word, pictures, drawings, signs, and photos.
- Time to prepare children beforehand when there is going to be a change, and inform parents.
- Engage children in preparing for the next activity by giving a specific task.

Play Time

Some additional help in including young children with learning difficulties during playtime may be needed. This should be carried out with caution as many a time it could interfere with a child's ability to initiate independent play with other children; understand the rules of the game; and understand the "rules" of being a friend. It is helpful for some mistakes to be made so that the child also experiences the consequences of negative acts, and also gets the opportunity to learn from mistakes.

Encourage Interactions by:

- Setting up cooperative play groups, preferably small ones.
- Organizing discussions on learning disabilities through, for example, whole class/school talk or during circle time. It is important that peers become familiar with their classmate.
- Instituting a "best friend" system.
- Using peer support instead of adult support whenever possible.
- Enhancing self-esteem and self-confidence by giving responsibility—such as handing out books, taking messages, etc.

General Classroom Strategies

Many students with learning difficulties do not cope well with a number of common classroom practices: whole class teaching, learning through listening, and follow-up work based on the completion of unmodified text activities or work sheets. Therefore, teachers may need to design some strategies to assist the teaching process. Decide when the child should work:

- In groups or with partners in class.
- In groups or with partners in withdrawal area.
- As an individual independently or one-to-one.

Focusing on Ability Oriented Assignments

1. When independent work is presented, try to give it to the student in small "segments." For example, a test or worksheet could be folded in half. The student could be asked to do the first half and then come up for further directions. This prevents the student from feeling rushed or overwhelmed with the amount of work given.
2. Allow extra time (within reasonable limits) for students who have difficulty. Also, reducing the length of an assignment is sometimes a good idea.
3. Have a large variety of multi-level reading books in the classroom. A listening center is also a "must have." Have parent, senior school students, and other volunteers put some of the relevant chapters of the textbooks on tape so that students with disabilities may use them.
4. Use story maps and other graphic organizers to assist students with writing tasks. Make up a chapter outline and give it to all the students. It teaches them to attend to the important points in a chapter.

However, there are some aspects where there is no room for negotiation. Thus, all students should:

- enter the classroom at the same time as other students;
- be seated so that he/she can see and participate in all activities and so that other students and the teacher can interact easily with her/him;
- participate in classroom activities at the same time as the other students;
- make transitions from one activity to another at the same time as the other students;
- leave the classroom at the same time as the other pupils;
- have his/her academic and social progress a constant focus of the program;
- be involved in class activities, e.g., asking and answering questions and group activities;
- be encouraged to behave the same way as the other pupils;
- be assisted only when necessary with that assistance fading as soon as possible.

Factors that Inhibit Learning

- Delayed fine and gross motor skills.
- Auditory and visual difficulties.
- Speech and language inadequacies.
- Short-term auditory memory deficits.
- Shorter concentration span.
- Difficulties with consolidation and retention.

A brief account of each of these inhibiting factors follows, with some strategies to address them. These strategies are designed to make use of strengths and weaknesses in order to build a successful teaching program. Many of these strategies will be recognizable as basic good teaching practice and so will be equally suitable for other children in the school.

Visual Difficulties

Although children with learning problems tend to be very good visual learners and are able to use this strength to access the curriculum, many have some sort of visual impairment with a majority being prescribed glasses early.

- Place student near the front of class.
- Use larger type.
- Use simple and clear presentation.

Hearing Loss

Many children with learning difficulties experience some hearing loss. Up to 20 percent may have a sensorineural loss, caused by developmental defects in the ear and auditory nerves. It is particularly important to check children's hearing, as this affects their speech and language.

- Face the child when you speak.
- Reinforce speech with facial expression, sign or gesture.
- Reinforce speech with visual backup print, pictures, concrete materials.
- Write new vocabulary on the board.

Fine and Gross Motor Skills

Many children with learning difficulties have poor motor coordination. This can restrict early experiences and delay cognitive development. In the classroom, the delay in development in writing skills is particularly affected. Children may have more difficulty participating in team games and small group or partner activities with set objectives may need to be provided.

- Provide additional practice, guidance and encouragement—all motor skills improve with practice.
- Provide wrist and finger strengthening activities, e.g., threading, tracing, drawing, sorting, cutting, squeezing, building, etc.
- Use a wide range of multi-sensory activities and materials.
- Keep activities as meaningful and enjoyable as possible.

Speech and Language Difficulties

Children typically have speech and language inadequacies and should be seen regularly by a speech and language therapist who can suggest individualized activities to promote their speech and language development. As said before, the aim is to provide for all services within the setting of the school. In case during the very early period of beginning inclusive practices when a resource room has not been set up, the support of the parents could be sought.

Strategies

- Give time to process language and respond.
- Ensure face-to-face and direct eye contact.
- Use simple and familiar language and short concise sentences.
- Check understanding—ask student to repeat back instructions.
- Avoid closed questions and encourage the student to speak in more than one-word utterances.
- Encourage the student to speak aloud in class by providing visual prompts.
- Set up regular and additional opportunities to speak to others—e.g., taking messages etc.

The language delay is caused by a combination of factors, some of which are physical and some due to perceptual and cognitive problems. Any delay in learning to understand and use language is likely to lead to cognitive delay. The level of knowledge and understanding and thus the ability to access the curriculum will inevitably be affected. In general, receptive skills are better than expressive skills. This means that children may understand language better than they are able to speak it. As a result, their cognitive skills are often underestimated.

Concentration Span, Consolidation, and Retention

Children with learning difficulties generally take longer to learn and to consolidate new skills and the ability to learn and retain can fluctuate from day to day. To assist consolidation of information and thereby retention:

- Provide extra time and opportunities for additional repetition and reinforcement.
- Present new skills and concepts in a variety of ways, using concrete, practical, and visual materials wherever possible. Carry on to teach new skills but continually check back to ensure that previously learned skills have not been overwhelmed by the new input.

Increasing Concentration Span

Many children with learning difficulties have a short concentration span and are easily distracted.

- Build a range of short, focused and clearly defined tasks into the lesson.
- Vary the level of demand from task to task.
- Use peers to keep student on task.
- Put in a range of activities that the child enjoys doing thereby encouraging choice within a structured situation. Allowing another child to join in is a good way of encouraging friendships and cooperation.

Additional Support

Most children will need additional support from a resource teacher. The type of support the child receives can have a tremendous impact on the effectiveness of the inclusion.

Role of the Resource Teacher

- To help differentiate or further modify lessons and activities planned by the teacher.
- To provide feedback to the teacher.
- To provide opportunities for the teacher to work with the particular child with learning difficulties either individually or in a group, by exchanging roles.

Note that

1. Special educators must be a part of the instructional or planning team.
2. Teaming approaches may be used for problem-solving and program implementation.
3. Regular teachers, special education teachers, and other specialists must collaborate (e.g., co-teaching, team teaching, teacher assistance teams).

It is important that the resource teacher is seen as belonging to the whole class, giving help to all children in need of it, and not seen, as only belonging to the child with learning difficulties. In this way, other children in the class can benefit from extra help and care too. The aim of the support is to ensure that the child learns to work cooperatively and independently.

Precaution: Be aware that too much one-to-one support can result in the child becoming dependent and failing to learn.

Modifying the Curriculum

Adapting curriculum to meet the needs of students with disabilities can be a challenge. Educators sometimes feel they need to "water down the curriculum" to accommodate students with special needs. However, in order for a curriculum to make sense it should be of instructional value and not one with socialization as its objective.

To achieve this goal, teachers need to find out what a student's educational objectives are. The teacher will need to know whether the student has an adapted curriculum with different goals than his or her typically developing classmates or whether the student needs modifications to the general education curriculum, such as extra time on tests.

When planning lessons and activities, it is helpful to include project work, both individual and group. This, as an instructional tool is beneficial to all students.

> If the curriculum could have been adapted to my son's needs it would be a great help. My son did not learn much of the curriculum, but he had to take the same examination paper as other children. I think it was impossible for him to take a general examination or curriculum because he had not yet reached the standard. Moreover, even for regular students, their examination results may not be very ideal .... Now in the special school, my son is not learning positive things. He seems to be staying where he was, or even a little back ....
>
> —Rachit's mother

Coordination between general education teachers and resource teachers is essential. For example, if a student requires remedial reading instruction from a resource teacher, the student should be taught with the same material his or her general education classmates are using.

Although there will be a continuing need for targeting independence and social behavior, the prime social inclusion targets should be achieved in the early years. More attention can be given towards accessing the curriculum as the child progresses through grades 2 and 3.

Praise as a Reinforcer

Many teachers use praise to encourage students, especially those experiencing difficulty mastering the subject matter. Research suggests that praise is most effective when teachers use it selectively, concentrating their approval on genuine student progress and accomplishment. When students are applauded every time they have contact with their teacher or for accomplishing simple tasks, that praise is rendered virtually meaningless.

Contradictory Effects

So when and how is it right to praise students? For starters, it's helpful to look at praise in a larger context—as part of the feedback teachers give their students. Students respond best to feedback that is sincere and specific. Specific praise that calls attention to actual circumstances is more meaningful and helpful.

Praising students may not be as simple as it seems, but don't let that stop you from using it in your classroom. A teacher's encouragement can buoy a struggling student and reward a youngster's hard work and accomplishments. Praise, used wisely and well, is a valuable gift teachers can offer their students.

Parental Involvement in the Learning Process

Enthusiastic teachers and informed parents working together can make a difference, even in the most challenging situations. Where does this partnership lead? What kind of outcomes should be expected? At present, parents tend to value academic achievement above all. This is understandable; we all want our children to acquire useful knowledge and skills, and qualifications are an inescapable

part of our education system. The initial contact that parents have with the school sets the tone for all future encounters. Early on, parents and teachers need to meet and talk about the educational and development needs of each child. The results of baseline testing can be shared and a specific learning and development program put in place. Educational plans for children with special educational needs should be a joint one, in which parents acknowledge their contribution as well as that of the school.

Children's progress can then be measured against their plan and against other appropriate benchmarks. This additionally assists schools to value each child's achievement and help all parents to connect with the learning process.

Transition to Secondary School

Curriculum planning and differentiation tend to become more challenging over time and they are at their most complex by the time the student reaches 6th grade. The aim is to create a balance between the subject content and the student's individual needs. Some areas of the curriculum will be much more accessible than others. How much of the curriculum is appropriate with learning difficulties will vary with each individual and the quality of the learning experience has to be assessed as much as the learning outcome. The keynote is flexibility in approach and content.

Classroom Practice

Students with learning difficulties, as with most students with special educational needs, do not cope well with a number of classroom practices common in many secondary schools such as whole class teaching, learning through listening, and follow up work based on the completion of unmodified text activities or work sheets. It is important, to utilize the motivation of the student to learn from their peers. For some purposes, ability will be less important than learning styles and attitude/behavior. However, since most grouping in secondary schools tends to be based upon ability, these students might end up in the low(-est) ability group. Low ability grouping is probably appropriate in certain circumstances, but too much denies students opportunities to learn from others with a wider range of ability and in different situations.

Assessments!

Teaching students with learning disabilities effective study strategies is only one part of helping them reach their full potential. Teachers must also make sure that students acquire the required content objectives for each subject. Often, students with learning problems may not develop a full understanding of what they are learning.

Problems with Modified Assessments

Modifications, in the form of shorter tests or less complicated test questions makes it difficult for teachers to get an accurate measure of what the student has learned. For example, if a student who is a slow learner or has intellectual impairment receives a multiple-choice test with only two answer choices instead of four or five, the format makes it easier for a student to guess the correct answer if he or she is unsure of the best choice.

Summative assessments do not allow a teacher to intervene until students fail.

Also, by using **summative assessments**, the norm in secondary school classes, teachers usually do not know if a student learned a unit's concepts until the unit test. And because a secondary-level curriculum's pace is often tightly structured, most teachers do not have time to remediate and re-teach concepts not mastered.

As a result, students are usually given re-tests, which are often made easier to ensure students will pass. But although a student's grade may reflect satisfactory achievement, in reality, the grade may not reflect whether the student has actually mastered the concepts and skills taught.

An ongoing measure

To come up with a more proactive way of ensuring that students with special educational needs are acquiring content knowledge, it is necessary to develop curriculum-based measures for assessing secondary school students.

Options for Alternative Assessment

Portfolio assessment

Teachers collect samples of a child's work in a portfolio to assess progress over time. Artwork, audio-taped conversations, and science projects are examples of what can be included, and the child has the opportunity to participate in selecting and evaluating the content. Portfolio assessment provides a comprehensive picture of a child with a disability when traditional assessment methods fail to measure or document progress.

Performance assessment

Children are assessed as they complete tasks. The tasks, which can be developed specifically for the assessment or occur as part of a child's daily routine, can assess all the skills in the students repertoire.

Dynamic assessment

This approach determines a child's potential for learning and responsivity to instruction by comparing what the child does independently and what the child is able to do with additional

Assessment, Grading and Testing

1. Provide a quiet setting for test taking; allow tests to be scribed if necessary and allowing for oral responses.
2. Divide test into small sections.
3. Grade spelling separately from content.
4. Allow as much time as needed to complete.
5. Avoid speed tests.
6. Provide monitored breaks from test.

support and assistance. This allows professionals to get an accurate measure of what interventions a student needs to do his or her best.

Homework

Difficulties with language and short-term memory can make remembering what is expected for homework a difficult task. Since it can also take a student much longer to complete homework than their peers, it is important that all homework is suitably differentiated in terms of content and time.

Strategies

- Homework to be differentiated.
- All homework to be written down in full in Homework Diary.
- Add short and concise additional explanation, linking to lesson.
- Ensure date for completion is written down.

FACT SHEET 1

What are the Intellectual Impairments

The term intellectual impairment, for the purpose of this section, has been used broadly to encompass the entire gamut of intellectual deficits leading to problems in learning. Intelligence has been traditionally measured by standardized Intelligence Quotient (IQ) tests. The IQ test assesses the numerical, spatial, graphical, and logical reasoning of the mind. The IQ score is a statistically calculated number which indicates relative and comparative analytical abilities and abilities to interpret data and visual information.

Intellectual impairment means significantly subaverage general intellectual functioning, which exists concurrently with deficits in adaptive behavior and manifested during the developmental period that adversely affects a student's educational performance.

Thus, this term includes—below average functioning; slow learners; and mental handicap:

- An individual is classified as below average, when the IQ range is between 80–90 points on a standardized test of intelligence.
- An individual is classified as a slow learner, when the IQ range is between 70–80 points on a standardized test of intelligence.
- An individual is classified as mentally handicapped, when the IQ falls below 70 points on a standardized test of intelligence.

According to the above definition, the three IQ criteria must be met before an individual is classified as mentally handicapped:

1. subaverage intellectual ability (IQ 70 or lower);
2. problems in adaptive functioning;
3. manifested before the age of 18 years.

- Students who are mildly mentally handicapped have an IQ range of 51–70 points and are in many ways quite similar to their peers who are not impaired.
- Students who have moderate mental handicap have an IQ range of 36–50 points and are more obviously developmentally delayed. Students who are moderately impaired can learn to take care of their personal needs and perform hands-on vocational tasks.
- Students who are severely mentally handicapped have an IQ range of 21–35 points and are more dependent on others for basic needs. Students who are severely impaired can learn basic self-care and can contribute partially to self-support usually under supervision.
- Students who are profoundly impaired have an IQ range below 20 points and may be largely dependent on others for their care.

In most children the cause of intellectually impairment remains unknown. Early identification of marker characteristics that predispose children to mental impairment allows for environmental intervention to reduce or prevent eventual developmental delay. For some children, the primary factors that produce mental impairment can be found in their environments. For still other children, the interaction of physical influences and environmental variables also result in mental impairment or seriously delayed development. These variables, organismic, and environmental, that contribute to mental impairment and delay are termed "risk factors" in development. Research to identify and to help control (intervene, mitigate, and prevent) risk factors and the adverse outcomes of mental impairment are the aims of this theme.

Difference between Slow Learner and Learning Disabled

Slow learner

IQ usually between 70–85; achieving within expectancy range.

- Development is even.
- Consistency between academic achievement levels and mental development.
- Consistent pattern in developmental history. May learn "rote" skills adequately.
- Child performs equally well in all types of tasks used to measure intellectual ability.
- Steady pattern of academic progress, but it is slow.
- Behavior deficits fit into a pattern of slow development. Behavior and social interests are more typical of mental age than actual age.
- Consistent difficulty understanding abstract concepts.
- Needs more repetition in order to understand material presented in class.

Learning disabled

IQ average or above average; achieving significantly below ability due to significant processing deficit(s).

- Erratic pattern in development.
- Inconsistency between achievement levels and mental development.
- Slow to learn one set of skills, but quick to learn another.
- Child may receive the same overall score as a slow learner, but performs very poorly on some types of tasks and exceedingly well on others.
- Pattern of progress and subsequent regression.
- Behavior deficits, if any, are related to a specific disability.
- May have difficulty understanding abstract concepts.
- Does not necessarily need more repetition, but may need information presented in different ways.

FACT SHEET 2

Instructional Strategies for Slow Learners

The three major components of teaching slow learners include:

1. making the abstract concrete;
2. not assuming generalization; and
3. working toward automatization of basic concepts.

In general, when teaching slow learners, make information as explicit and concrete as possible. If they can see it, touch it, or do it, then learning will be easier. For example, the slow learner learns

math much easier if it is taught on an abacus. An abacus is systematic and concrete—like a calculator; yet, unlike a calculator it helps teach concepts.

Reading skills can best be taught through a combination of direct and systematic phonics-based instruction and heavy use of reading practice. When reading fluency is poor, it is a gigantic task to motivate the child to read regularly. Examples of interesting reading material are directions for assembling models, car repair manuals, cookbooks, how-to books of games, and books on dance or sports.

Interestingly, field trips, dissecting animals, internet projects, writing books, special projects and the like are often the domain of gifted programs, but it is well-known that all children, including children who are slow, benefit from the touching, seeing and doing curricula at least as much as high-intelligence children.

Contrary to popular belief, slow learners can learn discrete academic facts at their appropriate grade levels. The problem lies in the decreased ability to generalize problem-solving strategies and skills. Slow learners often understand exactly what is taught and little more. The slow learner may understand the example, but have a difficult time acquiring and applying the general concept to new situations due to limited deductive and inductive reasoning skills. Slow learners require that most facts be taught discretely without the assumption of generalization until concepts eventually can be internalized.

A goal of instruction for slow learners is to make the basic subskills of academic tasks automatic. And this can be done by the increasing use of speed—thus the key is to challenge the student to respond faster using timed performance and computer assisted instruction—a little at a time till they are forced to automatize these subskills. In addition, the results can be charted so that children see their progress in terms of response time. Encouraging high rates of speed of response improves automaticity and is a motivating tool. Teach quickly and encourage children to respond quickly.

FACT SHEET 3

Problems Faced by Slow Learners

Intelligence is not a black and white issue, i.e., a child need not be categorized as retarded or normal. Intelligence is a normally distributed continuum. Cutting scores are entirely artificial, but necessary for quantification. In the reality, away from this need to quantify everything, slow learners are at risk due to severe and permanent problems. The gap between reality and quantification is where slow learners fall. If the institution of education is more responsive to these children, then society would be less burdened by the aftereffects of educational failure.

Slow learners are usually defined solely in terms of intelligence test scores, educational placement and methods of instruction. However, slow learners are not only at risk for educational failure (because of the system), they are also at risk for mental health problems (due to the aftermath of the

many failures as a result of that system). The assumption clearly is that slow learners are at risk for emotional problems due to skill deficits.

Schools Help Socialization

But this is not completely true. As such, schools have a responsibility to provide skills. Or, at the least, to not take away a child's motivation to acquire needed skills. An alternative explanation is that some mental health issues interfere with the ability to develop skills. Certainly, there are cases where this is true. Most evidence suggests that most cases of slow learners with low self-esteem, lack of motivation and mental health problems are due to lack of skills. Although schools cannot interfere with the atmosphere in the home and in the family, schools are definitely in a position to furnish foundation skills for social interaction and academic achievement within its own precincts.

Coping Styles

When internal emotional problems are not addressed or resolved, children with borderline intelligence are more likely to tackle social conflict with aggression, and are more likely to have inadequate coping mechanisms when faced with personal crises, than persons with average intelligence.

Slow learners, as has been long recognized are not eligible for special education services and need additional supports in regular schools. When inappropriate placement is made then these very same children would be referred some years later for severe emotional and behavior problems. It is apparent that the failure to provide early educational interventions might have led to increased frustration and future behavior problems.

FACT SHEET 4

Teaching Students with Intellectual Impairments How to Study and How to Organize Their Work

- Provide students with a sample chart for planning their study time at home.
- Encourage students to evaluate the effectiveness of their own study habits.
- Encourage: READ—ASK yourself what you read, and PUT it in your own words, strategy as a study method.
- Teach how to create study notes. Pre-lesson outlines make excellent study guides, providing the stimuli for fact reviews. The use of index cards with topics, subtopics, important facts and questions is an efficient study method.

- Teach the use of mnemonic devices, e.g., categorization, chunking, visual imagery, association, diagrams, verbal rehearsal, acronyms, funny sentences, enumerating, highlights, rhythm.

Organization of Work

- Calendar/Timetable: Post a weekly/ monthly timetable. Record dates for completion of assignments, tests, etc.
- Personal Assignment Record: Each student can record each assignment as it is given.
- Task Analysis: Break major assignments into smaller sections so that students see a workable approach to the task.
- Visualization: Teach visualization of the finished product before starting an assignment and model thinking out "loud" about what is needed to accomplish the task.

FACT SHEET 5

Augmenting Memory and Thinking Skills

Poor Auditory Short-term Memory and Auditory Processing Skills

Many speech and language problems in children with learning difficulties stem from difficulties with their auditory short-term memory and processing skills. The auditory short-term memory is the memory store used to hold, process, understand, and assimilate spoken language long enough to respond to it. Any deficit in short-term auditory memory will greatly affect the child's ability to respond to the spoken word or learn from any situation entirely reliant on their auditory skills. In addition, they will find it more difficult to follow and remember verbal instructions.

Some management tips:

- Limit amount of verbal instructions at any one time.
- Allow time for child to process and respond to verbal input.
- Repeat individually to pupil any information/instructions given to class as a whole.
- Try to avoid lengthy whole class instruction/discussion.
- Plan for visual translation and/or alternative activity.
- Remember: Children with learning difficulties are strong visual but poor auditory learners.
- Wherever possible, they need visual support and concrete and practical materials to reinforce auditory input.

Generalization, Thinking and Reasoning

Where any child has a speech and language impairment, thinking, and reasoning skills are inevitably affected. They find it more difficult to transfer skills from one situation to another. Abstract concepts/subjects can be particularly difficult to understand and problem-solving may be affected.

Management Guidelines

- Do not assume that the students will acquire the transferred knowledge automatically.
- Teach new skills using a variety of methods and materials and in a wide range of contexts.
- Reinforce learning of abstract concepts with visual and concrete materials.
- Offer additional explanations and demonstrations.
- Encourage problem-solving.

FACT SHEET 6

Integrating Occupational Therapy into Early Childhood Classrooms

Bridging the classroom environment to the child allows the child to have equal interaction and an equal learning experience. Occupational therapists (OT) are really skilled at getting children to participate.

Generally, it is very hard for therapists, to set up an experience in the classroom where children (with disabilities) can work on skills. Most therapists, by training, know what to do in a clinic, but those techniques are not necessarily compatible with what goes on in the classroom. The challenge is to retrofit the techniques to the new setting.

A barrier to successful integration of OT is the lack of collaboration between teachers and therapists. Adapting OT techniques to early childhood classroom activities can seem daunting, but it need not be. For example, the gross motor area of the classroom can have a swing that the therapist can use in an activity not only designed to provide OT for the children with disabilities, but also for the typically developing children in the class.

Most important is the need for OTs to familiarize themselves with the curriculum and the teacher's lesson plans, and plan ahead for any adaptations a child may need. "Approach it from a systematic standpoint and ask yourself, 'What do I need to do to modify the environment?' and 'How can the child fit into the class?'"

For actual interventions, the OT could look at each day's schedule to see where therapeutic activities can fit in. For example, trunk balance activities that use a balancing ball can be integrated into physical education class or playground activities.

Teaching Visuo-Spatial and Motor Skills

1. Introduce teaching materials using objects and themes that the child appears interested in to motivate work on other tasks. For example, if the child is fascinated by cars or machines get her to trace over, copy and draw outlines of these. She will be more willing to practice pencil and paper skills if she is asked to draw something she is interested in rather than any other object or shape.
2. Try to incorporate music into appropriate gross and fine motor exercises such as balancing, ball play, threading beads, etc. Clapping to music and banging musical instruments can also be used to encourage early perceptual-motor development.
3. There are many enjoyable computer programs available, which help children to develop skills in matching, discrimination, etc.

Coping with Noonan's Syndrome

I am Pavan. I am 15 years old studying in grade 9 in Laxman Public School, New Delhi. I have been in this school for 10 years now. I am told that I am a slow learner. My memory is good only for short time. I have a genetic condition called "Noonan's Syndrome." This has posed a challenge to my capabilities. Instead of counting my limitations I have been inspired to face the challenge. My parents and elder brother are a constant source of inspiration to me. All my primary school teachers were very kind and helpful. They taught me to cope with difficult things like drawing, making friends, and playing with classmates. I like Computers, Science, Social Studies, and Sanskrit. I love playing cricket and watching every match on television. Ramneek is my best friend since grade 2. He helps me in completing classwork and homework. I wish this world had more Ramneeks to help children like me.

When my grade 7 result was withheld, I felt bad and nervous, thinking that I would have to repeat again. I was worried as I was older in age and looks in my class already. I was happy to be promoted. In grade 8, I got tuitions and improved but still did not get minimum passing marks. I was worried and scared that my parents would scold me but they understood my difficulty and convinced the principal that I was doing my best. In grade 9, I faired well in Social Studies but failed in English. I find it difficult to understand and write in my own words. I will try and improve. I love Computer Science and intend to study the same in higher classes.

My friends are generally good but some tease saying "pagal." I want to be like any other boy, bold, courageous, and scoring good marks. But I know my limitations and am not going to be deterred by academic performance. My teachers observe this and help me to cope with such situations.

I wish the school evolved smoother ways of announcing the results of children like me with all other classmates. Things are becoming tough but I will also become tough as my father keeps reminding me every time I feel low. I love my parents and elder brother as they are always with me.

Source: Pavan Suresh.

Our Son and Us

My grandfather wrote in a postcard on my birth in 1944, that I have a "Rajyoga" and would be very lucky. I got married in 1979 when I was 34 years. My wife Prabha is eight years younger than me. It is about our third child Pavan that we write about.

Born on December 19, 1987, by an elective caesarian, he was diagnosed to be having a heart ailment in the first few hours after birth in Bangalore. It was only three years later, in the early 1990s that Pavan was diagnosed to be a case of Noonan's Syndrome by genetic testing in AIIMS. Pavan had apart from his heart problem, slow development of milestones, learning limitations, and speech problem. It was psychologically upsetting for my wife and she almost left the child with my parents. With my psychological support she slowly stopped feeling guilty and started working towards helping Pavan. She was the one who took him regularly for speech therapy.

He joined a regular kindergarten where he received a very firm foundation in the 3-Rs and in interacting with other children. We had to move him to another school when he was 6 years old, and we started looking for one that could provide additional support for slow learning children and help them integrate with the normal class depending upon his/her progress. We learnt that Laxman Public School (LPS) in Hauz Khas had such arrangements. The admission procedure was not difficult since they admitted him for the special section. Hardly a year after the entry they felt he could join regular classes of grade 2 for Maths and English. They did allow him to go to a regular grade 2 keeping his attendance and lien in special class. The following year the school decided to integrate him fully.

The problems started in grade 6 where Pavan started finding it difficult to cope with history and geography. The teacher unfortunately did not realize the need for extra support he needed. She kept on hackling him and Pavan would not do even homework. One fine day in the second term she wrote in his diary about his not doing the homework and requested us to meet her. When I met her she was in a complaining mood and not willing to listen to my version of the story. Later I had to meet her twice and convince that there was no intentional negligence on his part. He just avoided what he did not enjoy. Inspiring him was the only way to make him learn, I told her. Having completed the backlog of homework in a week's time, she was reassured.

He had problems in drawing lines, figures in Mathematics, Science, which is still there. His grades have slowly started moving towards the top of the last 10 students in the class. We help him regularly in homework and preparations for tests or examinations. My wife helps in Social Sciences and English; and I in Mathematics, Science, Sanskrit, and Hindi.

At the end of grade 7, we were in for a shock. It was not the actual results that bothered us, but the way it was announced. A day before the results were to be announced, we received a note asking us to come three days later. Pavan was promoted but the suspense left him very downcast. It would have been so much more positive to have the teachers declare his poor performance on the day the results were announced for all.

Grade 8 brought the challenge of dealing with some classmates teasing him. Though the teachers helped, my request to the coordinator did not help in stopping the same. The erring students, parents, and us could have been brought together and counseled.

Pavan is like any other child, he loves playing cricket and follows very meticulously all international cricket events. He enjoys his Taeko-won-do lessons, which does a lot in building his self-confidence. He follows World Wrestling Fights on television. He is shy making friends with girls.

(Contd. on next page)

The challenge will be tougher as Pavan moves to higher classes. I keep repeating to him the saying "When the going gets tough, the tough must get going." We do not expect academic excellence, we want him to lead an independent and productive life.

Source: K. Suresh.

About Noonan's Syndrome

Noonan's Syndrome is a condition which affects both children and adults. It is often associated with congenital heart disease and short stature. It is believed that 1 in 1,000 to 1 in 2,500 children worldwide are born with this condition.

Often called a "hidden" condition, the children affected may have no obvious casual signs to the onlooker, but the problems may be many and complex with no clinical test available. This is a genetic condition that can affect the heart, growth, blood clotting, mental, and physical development. Affected individuals may have learning difficulties and many other anomalies. Noonan's Syndrome is one of the most common of those conditions associated with congenital heart abnormality.

Its exact cause still remains unknown ....

Working with Ryan

I wasn't really excited about working with Ryan. Ryan was a hyperactive child—he was suffering from an attention deficit disorder and a slow learner. And I was his resource room teacher, assigned to work with him, initially for three hours a day, to be faded till he could be integrated into the regular basis in a full-time capacity.

I had started work in this integrated school in Bandra, Mumbai, and there I was waiting apprehensively for my student to arrive. It was to be a one-to-one approach because Ryan was an exceptionally challenging case. I was told that Ryan had seen to the nemeses of several teachers before me.

Ryan attended the afternoon shift. He was sent by his mother well in time, and every day a well scrubbed, freshly dressed Ryan came in at 12:30 pm. His entry would be dramatic—he would burst into the room like a noisy firecracker and hurtle into his chair.

Ryan babbled volubly—mostly an excitable incoherent stream of words strung together without any sequence or logic of thought. There was a lot of repetition on some of the consonant sound words. Any conversation with Ryan would bring on his echolalia—when asked a question, he would echo over and over again the last few words uttered by the speaker.

Ryan was 12—a sturdy, well-developed boy, "Well suited to the sports field" the thought crossed my mind.

Planning a Strategy

While working with special needs children, there are some dos and don'ts that should govern the teacher's approach. I do believe that intuition and common sense play a very important part of a

sensible approach. Being able to vary strategy to suit the needs of the learner is a major strength of the special needs teacher.

I realized that Ryan would need a very slow, deliberate, and almost a paced, rhythmical approach to counter his jerky movements and excitable babble. (As a music lover, I kept thinking of the stride of the metronome.) It would be good not to even generate too much talk between us, and use silence as a device.

Using Yoga

Yoga is the working sister of silence. Ryan and I would be on a mat on the floor of an empty classroom and we would start each working day with some simple *asanas* in yoga.

Did yoga help? Ryan learnt to breathe deeply and deliberately, and as he did so, his shoulders and neck muscles relaxed a bit and his fists began to unclench. He was able to sit on the yoga mat for longer and longer stretches; he was able to keep his silences and listen to my words, reassuring him that he was doing well. I constantly reached out and stroked him on his head and forehead, held his hands, patted his arms—touching the child is an important early therapy to build up bridges of confidence between the teacher and the learner.

Towards Application and Cognitive Skills

Ryan was now ready to start working on an application activity. I introduced him to a set of Lego blocks that were in the center, but the very next day Ryan brought in his own Lego set with a note from his mother, "Please use this Lego set for as long as you want."

It is when children work with their application skills that the sensitive teacher can observe how their cognitive faculties emerge and find expression. Ryan's imagination was beginning to work. Using Lego blocks, Ryan was actualizing the tall houses and flyovers of the Mumbai of his daily experience. Without realizing it, he was learning patience and persistence. He was experimenting with shape and form. He was innovating. He was learning to be precise while fitting the molded blocks into place.

Developing the Tactile Faculty

I brought in some potter's clay for Ryan. He was at once interested. Watching my fingers and listening to my instructions he was able to make pinch pots. His mother came in one day and was surprised that Ryan should be able to make pinch pots. Ryan's fine-motor-control abilities had evolved in an admirable manner.

I am a "Means to the End" Teacher

I was in fact going in reverse order in relation to the materials I had introduced to Ryan. To work on the tactile faculties, I have maintained that the child's first touch experiences must be connected to soft, pliable materials like play dough and potter's clay. In this case the Lego blocks belonged to Ryan and therefore it was important to win his participation spirit by working from his own familiar objects.

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I believe in the means to the end approach in teaching. Whenever it is necessary to vary your approach, alter your plans, reverse the levels of materials and tools, always draw on your best ally—your intuition and common sense.

In this case I realized it would be best to take Ryan from the familiar medium to the unfamiliar medium. A tense, insecure, and highly strung child, may need to tarry a while among his own familiar things. When children bring in toys and books from home, it is the child's way of accepting you and saying, "I trust you with my feelings." Teachers must realize that they have achieved milestones.

Getting off the Ground with Ryan

I was thinking up a way of developing a pattern of consistency in Ryan's thought process. The first challenge was to create some levels of interest in his life. The yoga, the Lego, and the play dough may have done part of the job, but it was only just the beginning. I did get the feeling that the boy was quite simply bored of coming to school and was trying to buck his surroundings which may have been restrictive in an unintended manner.

Quite plainly, Ryan was not interested in the English reader which he had been assigned to. He was able to read the simple words, would skip the compound words and was, in fact, quite good at retaining teacher-read books in a parrot-like manner. This might have been a survival tactic unconsciously devised by him to escape further teacher inputs.

Setting out a Language Program

I realized early that Ryan was not going to be able to sit at books, much as it was expected of him. The exercise books, pencils, the chore of making cognitive connections with or without mnemonics (as in math) would not work here because there was no previous premise provided, in fact, the only concentration span Ryan was able to acquire was when he worked at his Lego blocks. The only waking calm he had discovered was through the yoga he did with me. Because of his robust physical energy, I couldn't help feeling intense sympathy that such a boy should be confined to a classroom.

I started taking Ryan out for walks around and up and down the roads of Pali Hill in Bandra (where the school was located). I would not recommend this method for younger, less experienced teachers, or for older, less energetic ones. Very special care has to be taken that the child (or children), are anchored safely to the teachers. Above all, any field trip must have a purpose.

Our walks had multi-level purposes. Ryan had loads of energy to burn, so the walking was physically therapeutic for him. As we walked, we saw much, and talked about the things we saw. We walked up to the sea front and looked at the sky touching the sea.

Along the winding, hilly streets we saw many cars. Low, sleek, snarling ones often driven by film stars (for we were in the film-star suburb). This is when Ryan came into his own, and delighted in identifying the different models of cars, just as all boys love to do. This is when we quite forgot that in fact this was a learning exercise. Ryan knew all about racing-model steering wheels, speedometers, air-brakes, double-d-clutch, special grip-road tyres. A film star saw us admiring his red Ferrari convertible and offered a ride in it. We climbed in and drove to the end of the road. I often wonder why teachers don't try to draw on the intrinsic interests of their learners because obviously you learn best what you love best.

From Experience to Application

Back in classroom, Ryan and I now had a lot to work from. I would give Ryan about five sheets of paper, crayons, and pencils. Ryan would have to draw out the things that we did on our walk for the day. As he drew, we also talked about our walks. As we talked we could also think of so many things we had seen along the way—the fishermen's nets in that far corner near the coke stand, the steep steps leading up to Mount Mary's Hill, the sound of the church bells being carried down to us on the sea wind.

Ryan was now beginning to sequence his thoughts, and draw connections from experience to concept. When we talked about the wind blowing about us, Ryan had already felt it at the sea front. The primary activity of drawing was the way Ryan recalled and actualized the different experiences. The four or five sequenced picture frames which Ryan drew up were the steps toward training his thoughts on a focused outcome, i.e., "the story of our walks."

Verbalizing Thoughts

Ryan was talking easily, cohesively, and sequentially about our walks, but he was not able to write down his thoughts. We looked at each of the picture sheets he had drawn and as he spoke about them I wrote in short sentences below, underlining some of the words which we thought we should remember.

Once Ryan started to get excited about his abilities we reduced our walking sessions (now keeping them to once a week), we were able to spend more time in the classroom working on different areas from the language frames.

The Way We Worked

- We underlined the words which we thought we should remember.
- We wrote the words on reading cards and grouped them in families of nouns and verbs.
- We split the words into sound clusters and started to spell them phonetically.
- We were framing sentences spontaneously because we were so enthused about maintaining our picture diary.
- We were beginning to read—at first we were framing our own sentences and creating our own stories. When we went back to the stories we were really interested to see what we had written. It was a very personalized interest, and therefore it was more the reason to read.

When reading comes from experience (as with everything else) it becomes easier. Ryan in fact quite forgot to resist reading because he was so excited about his own "Ryan-made" story books.

Ryan was now ready to start on textbook work. This was the same time I had to leave Mumbai. Ryan must now be a young man in his early twenties. I wonder how he is coping.

Source: Supriya Dasgupta.

12

AUTISM SPECTRUM DISORDER

Mythily Chari

It was not a happy day for Rajeev or his parents. At a time when parents of all other 4-year-olds were gearing up for the interview, dressing in their best clothes, hair combed and neatly parted, anticipating the moment when their number would be called. Rajeev's parents in fact dreaded that moment, for Rajeev has Asperger's syndrome.

This syndrome is an autistic disorder that affects the individual's ability to understand the social norms of society, to communicate effectively, to empathize with others and to consider hypothetical situations. In Rajeev's case this has caused him great difficulty in socializing in the park and in making friends, with the result that he sometimes felt alone and isolated. He has also had some difficulties in communicating with his nursery school teacher, as he tends to take statements literally, when they are not intended that way, which can cause confusion to both parties. In the play school, when the other children would join hands to sing Ring-a-ring-a-Roses, Rajeev would put his head in his hands and jump around, unmindful of his joyous shouting drowning the sounds of others. At other times he would want to sit around the table, alone to draw roses—always doing what was different from the group. The other children would eye him from a distance, the teacher thought it best to leave him alone.

At the end of the year his parents were glad that the year was finally over and that they would get the chance to apply to another school—which they did with trepidations and some hope. But as the day of the interview drew closer the hope receded and the anxiety grew. Rajeev seemed unconcerned, wrapped as he was in reading the latest Noddy. Rajeev's reading skills were advanced—like that of a 7 years old. At the interview he refused to even look at the friendly lady who asked him many questions and when she persisted, a shade too much for his liking, Rajeev simply rocked on his chair. If only they would have left him alone, or had given him a book to read aloud, or gave him some additions to do mentally. His father tried to suggest this, but time seemed too short and they were hastily ushered out of the room as the other child was called in.

Needless to say, he did not get admission!

How ASD Impacts the Child

Autism spectrum disorder (ASD) is a very heterogeneous group and it is difficult to list defining symptoms, but broadly the main areas in which deficits exist are:

1. Social interaction (difficulty with social relationships, e.g., appearing aloof and indifferent to other people, inappropriate social interactions, inability to relate to others in a meaningful way, impaired capacity to understand other's feelings or mental states).
2. Social communication (difficulty with verbal and nonverbal communication, e.g., really understanding the meaning of gestures, facial expressions or tone of voice).
3. Imagination (difficulty in the development of play and imagination, e.g., having a limited range of imaginative activities, possibly copied and pursued rigidly and repetitively).

In addition to this triad, repetitive behavior patterns and a resistance to change in routine can generally be observed, associated with a significantly reduced repertoire of activities and interests, stereotypical behavior, and a tendency of fixation to stable environments. Instead of a physical handicap which prevents people from physically interacting with the environment, people with ASD have great difficulty in making sense of the world, in particular the social world. ASD can but need not be accompanied by learning disabilities. At the higher functioning end of the autistic spectrum there are children with Asperger's syndrome—some of whom manage to live independently as adults and to succeed in their profession, but only by learning and applying explicit rules in order to overcome the "social barrier." Instead of picking up and interpreting social cues "naturally" they can learn and memorize rules about what kind of behavior is socially appropriate during interaction with nonautistic people.

From what is known about the manner in which individuals with ASD feel, it appears that they are painfully aware of their "being different" from other people, and express the wish to be part of the "world outside."

How Schooling Impacts the Child

With autistic children the focus is on interaction and this is done by imitation of others, where social abilities and cooperative processes unfold. The play school is a wonderful arena to observe the transformation of the shy child or the class bully, they all converge to the mean, to borrow a statistical expression! In general, all children are accepted by their peers but the child with ASD tends to be ignored or sidelined. What is it that makes the child with ASD antisocial? For instance, during lunch hour and playtime he grabs the tiffin or a toy, he never says please, and never waits for his turn, and is usually quick to hit out. When someone shares a toy or an orange he does not smile, make eye contact or say thank you. It is important to remember that the mere act of admission in play schools is not sufficient for the active facilitation of the inclusion process.

Designing Effective Preschools

Once a diagnosis is made, early intervention programing becomes crucial to appropriately address the child's needs in all developmental areas and, most importantly, to develop the child's ability to function independently in all aspects of life.

A dilemma faced by the referring psychologist or clinician is whether to inform the playschool about the child's condition and special needs. Some schools admit children if they are informed that the child's milestones of development are delayed, and that she/he may be hyperactive. On the other hand, there are instances of educators attributing every misdemeanor to the child's ASD.

It is the needs of the child and the family that determines the choice of school. In general, most professionals agree that in the early years, a child progresses better in the company of other children rather than with direct intervention.

The staff handling the child with ASD needs to have basic training in anticipating problems and to be prepared so that the effort in mainstreaming is programed for success. In general, when the teacher handles the child along scientific principles, then learning is maximized. Minimal adaptations or accommodations are required while interacting with children with ASD—no costly equipments or adapted furniture. The primary attribute is that the (very special) teacher has flexibility of mind; and an attitude of *why not* and *what if*.

Games as a Key to Inclusion

How do Children with ASD Play?

Though children with ASD do not pretend-play like their peers, but they could be taught to mime and role-play. Children with ASD do not use substitution (a skill displayed by 3-year-olds) effectively. For instance, a child when asked how the baby doll would sleep, since there was no pillow, could not substitute and went to his bedroom instead to get his own pillow!

Children with ASD very often play with a part rather than the whole toy. A typical free play area, where children are left to themselves to self-direct, works differently with children with ASD. If a

Encouraging Pretend Play

1. Make the child aware of the objects and their usage, i.e., cup to drink, spoon to scoop, etc.
2. At the presymbolic level, teach the child to extend the action from self to others—drink from the empty cup, make the teddy bear drink, make the doll drink, make mummy drink, etc.
3. Add the pretend element by using miniature empty cups developing the situation by miming actions like making tea, pouring, etc.

child with an ASD likes the wheel of a car, or a bead that has come undone, or a sticker that has peeled off from a toy, then she/he engages in spinning the wheel, sucking at the bead, or playing with the sticker. This results in the child being stimulated but the teacher dissatisfied for the result is not what was intended. At times the very boisterous nature of freeplay session creates a sensory overload and the child with ASD retires to a quiet corner.

Modifying Play Areas

Organization of Space and Material

It is helpful to visually demarcate boundaries by using screens, furniture or mats to indicate the expected action—to sit down or stand up or be seated on chairs. Typically, toys, books, and puzzles are kept in low shelves so that children can help themselves to them. Toys and puzzles should be kept in boxes or in shelves where access is restricted. This not only helps avoid the clutter and mess, but also facilitates communication. The child with ASD will have to communicate with another for help to get a toy.

Planning Transition Activity

Transition activities give the child relief from the anxiety of waiting while switching from one activity to another and also provide extra processing time to switch gears. Children with ASD do not usually internalize time. When an activity is about to finish it is good practice to provide a signal to remind them. Photographs, pictures or line drawings could be used as cue cards and kept on a stand to be flipped over or hidden to indicate the end of the session. This works as a planner.

Suman attends a Montessori school where mats are rolled and unrolled before and after a class. This provides visual, auditory, and kinesthetic sensory involvement prior to the start and at the end of an activity.

In Mona's playschool the teacher found that playing music for five minutes helped children calm down just before lunch.

Tips for Teachers

- Visual and auditory forewarning/foreshadowing are critical, in order to give the child much needed information relating to possible changes in routines.
- Assignments may need to be modified so that the child can complete them within a specific amount of time, prior to transitioning to the next activity.
- Use of a "finish later" folder or box may be helpful. Even though the child may be verbally reminded that the worksheet could be completed after recess, this information will not be processed as readily as through the use of a visual strategy, such as a "finish later" folder/box.

Peers as "Cotherapists"

The child with a high emotional quotient (EQ) could be involved in the inclusion of the child with ASD in daily activities. How does one recognize such a child?

Consider the following example: A group of children were shown a new toy in the class, a wind up clapping joker that was a rather noisy toy. The children were delighted! Every child wanted to a turn, one boy grabbed the joker and bit its Pinocchio-like nose, when the teacher squealed in mock pain, he laughed and bit the nose once more. The clamor for the toy rose and much fun was had by all, or nearly all. One little girl brought a quiet little boy forward and said "He did not get a turn." She exhibited sensitivity and a concern for the need of another. She displayed a higher level of EQ. She would be a natural choice as a cotherapist and could assist in interactive play with the child with special needs.

Optimizing Learning, Enhancing Communication

- Speak in soft and low tones to the child with sound sensitivity.
- Students with visual processing problems often find it easier to read if black print is printed on colored paper to reduce contrast. Try light tan, light blue, gray, or light green paper. Experiment with different colors. Avoid bright yellow—it can hurt the eyes.
- For those who cannot process visual and auditory input at the same time find it easier to associate words with pictures if they see the printed word and a picture on a flashcard. Some individuals do not understand line drawings, so it is recommended to work with real objects and photos first. The picture and the word must be on the same side of the card.
- In older children touch is often their most reliable sense. It is often easier for them to feel. Letters can be taught by letting them feel plastic letters. They can learn their daily schedule by feeling objects a few minutes before a scheduled activity.
- Children who have difficulty understanding speech have a hard time differentiating between hard consonant sounds such as 'D' in dog and 'L' in log. Even though the child may have passed a pure tone hearing test he may still have difficulty hearing hard consonants. Children who talk in vowel sounds are not hearing consonants.

Integration in Skill Area

Children with ASD are good at puzzles, building/stacking blocks and assembling toys. Thus, they need to be integrated in areas that enhance this strong point while his/her partner without special needs could help with, but not do, the activity. Later the cotherapist child could learn to fade and/or to delay responses, thereby encouraging the process of give-and-take.

Many autistic children get fixated on one subject such as trains or maps. The best way to deal with fixations is to use them to motivate school work. If the child likes trains, then use trains to teach reading and math. Read a book about a train and do math problems with trains. For example, calculate how long it takes for a train to go between New Delhi and Kolkata.

Transition from Early Childhood Program to the Elementary School

Due to difficulties in making transitions, accepting change, and generalizing previously acquired skills, the child with ASD may experience significant challenges in transitioning from early childhood program to a primary elementary program. Therefore, several critical components have been identified to assist the child in making this transition successfully.

> The child's early childhood program should take an active role in assisting the parents in finding an appropriate placement for each child transitioning from an early childhood program to an elementary school. Factors to be considered can include: class size, degree of classroom structure, teaching style, and the physical environment.

Develop Independent Functioning Skills

The initial development of independent functioning skills is an important factor in preparing the child for elementary school. It is critical to begin teaching children with ASD independent functioning skills as soon as they enter their early childhood program. These skills will assist them throughout their lives. Independent functioning in all curricular areas should be addressed (e.g., communication, social relations, play, self-help/daily-living skills, attending, navigating the school environment, etc.).

Parental Participation

Parents need to be part of an ongoing team that helps in setting goals and developing programs. Staff should develop strategies for making family members feel comfortable in school (e.g., regular reporting, parent visitations) and defining potential opportunities for participation.

In all cases, programs for students with ASD in inclusive settings must be individually designed. However, it is clear that individuals with ASD can be highly successful if appropriate program support and strategies are in place.

Elementary School

Effective interventions at the elementary school are based upon the presence of certain fundamental features:

- Need for sameness
- Dealing with problems of attention

- Curricular content
- Supportive teaching environments and generalization strategies

Need for Sameness

It is important to provide a consistent, predictable environment with minimal transitions. Use of a visual schedule can assist in providing the child with information relating to the day, as well as preparing the child for any changes which might occur in the daily routine.

Dealing with Problems of Attention

Children with ASD can often appear off-task, and may be easily distracted by both internal (preservative thoughts/concerns) and external (sensory) stimuli. Screening out information that is irrelevant can be very difficult, requiring conscious effort by the child and the teacher. A highly structured educational environment may be indicated for the child with ASD to experience success.

Strategies to Enhance Attention

- Students with ASD do not easily tolerate excessive transition or down time. For example, extended periods of time provide many individuals the opportunity to fall back on inappropriate behaviors or activities. Therefore, strategies should be in place to help the person cope with these stressful situations.
- Teaching relaxation techniques, desensitizing students to new situations, and providing the student with a "safe spot" in which to temporarily escape have been highly successful with many individuals with ASD.
- Students also may need to be taught waiting strategies to help with down time or transitions. Most importantly, professionals should ensure that the schedule provides students with a diverse range of opportunities that keep the student actively engaged in learning.

Curriculum Content

Variable attending skills

The child demonstrates attending skills that vary significantly, depending upon interests. For example he attends well to what is interesting or "makes sense," such as the computer, videos, puzzles, etc., but attends poorly to large group listening activities.

Difficulty in shifting attention from one stimulus to another

For example, if the child is engaged in a visual perceptual task of solving a math problem, then shifting attention to focus on an auditory directive given by the teacher may not be possible.

Difficulty attending in situations where there are multiple stimuli

Since the child with ASD has significant difficulty shifting attention, as well as prioritizing stimuli, attending to the "essential information" is challenging. For example, if the child's focused attention is on "sitting appropriately in a small group setting," he may not be able to focus on the information being taught by the teacher.

Optimizing Learning in the Classroom

The Physical Environment

Due to difficulties in appropriately processing and modulating all in-coming sensory stimulation, the physically structured environment should provide environmental organization for children with ASD.

Children with ASD generally do not automatically segment their environments like typically developing children. Large, wide-open areas can be extremely challenging for children with ASD. They do not understand what is to occur in each area, where each area begins and ends, and how to get to a specific area by the most direct route. A physically structured environment will create an easily understood, predictable and thus calming environment for the child with ASD. As a result the child's attention to the most relevant information for learning will be maximized.

Strategies to Ease Distractions

- **Furniture arrangement:** Environmental organization includes clear physical and visual boundaries, which help the child understand where each area begins and ends, and minimize visual and auditory distractions. Each area of the classroom (or other environment) should be clearly, visually defined through the arrangement of furniture (e.g., bookcases, room dividers, shelving units, file cabinets, tables, rugs, etc.).
- **Visual distractions** can be minimized by painting the walls and ceilings in a muted color (e.g., off-white).
- **Visual clutter** can be reduced by using sheets/curtains to cover classroom materials (including equipment such as a computer or TV/VCR), or by removing unnecessary equipment/materials from the classroom or to an area not in the student's view.
- **Natural lighting** via windows through the use of blinds, curtains, or shades can create a warm and calm environment.
- **Auditory distractions** can be lowered through the use of carpeting, lowered ceilings, acoustical tiles, and headphones for appropriate equipment, such as the computer or tape recorder.

The Learning Process

Schedules that reflect learning and social goals

The personal schedule for each student should reflect curriculum options within the general education setting. Once the schedule is established, it is important to help students develop useful self-management strategies to assist them to understand the expectations of the day and transitions. Picture or written schedules can provide students with critical information.

Some children who fidget all the time will often be calmer if they are given a padded weighted vest to wear. Pressure from the garment helps to calm the nervous system. For best results, the vest should be worn for 20 minutes and then taken off for a few minutes. This prevents the nervous system from adapting to it.

Effective instruction is planned and delivered

Effective instruction refers to the need to structure classroom instruction so that it reflects a student's learning style, and uses the student's time in an efficient and effective manner.

Avoid long strings of verbal instructions. People with ASD have problems with remembering the sequence. If the child can read, write the instructions down on a sheet of paper.

Curriculum and instruction is adapted to meet the needs of all students

Students with ASD may participate in the same activity with the same objectives, or in the same activity with adapted objectives. There are many frameworks available for identifying curriculum modifications and adaptations. Again, it is useful to remember that goals for the individual with ASD may differ from those for others. For example, while other students are working on multiplication skills, the student with ASD may be focusing on identifying numbers, exhibiting appropriate classroom behavior, and initiating requests for assistance. Wherever possible it would

Making Technology Easier to Use

Autistic children have problems with motor control in their hands. Neat handwriting is sometimes very hard. This can totally frustrate the child. To reduce frustration and help the child to enjoy writing, use of the computer is simpler.

Some children and adults with ASD will learn more easily if the computer keyboard is placed close to the screen. This enables the individual to simultaneously see the keyboard and screen.

Many individuals with ASD have difficulty using a computer mouse. Try a roller ball (or tracking ball) pointing device that has a separate button for clicking.

Some autistic individuals do not understand that a computer mouse moves the arrow on the screen. They may learn more easily if a paper arrow that looks EXACTLY like the arrow on the screen is taped to the mouse.

be in good practice to use technology. Thus, if writing is poor or slow then use of a word processor would be easier and less frustrating.

The Teaching Components

> Remember, students with ASD rely upon their visual channel to process information; therefore, seeing a whole stack of work to complete can prove overwhelming. Provide only the materials the student will need for the specific task/activity in order to decrease his possible confusion in understanding exactly how much and what work is to be done.

The teaching components include Work systems and Visual structure. **Work Systems** refers to the systematic and organized presentation of tasks/materials in order for students to learn to work independently, without adult directions/prompts. It is important to note that "work systems" can reflect *any* type of task(s) or activities (e.g., academic, daily living skills, recreation and leisure, etc.). Each "work system," regardless of the nature of the specific task or activity, should address the following four questions:

1. **What is the work to be done? What is the nature of the task?** (e.g., sorting by colors; adding/subtracting two-digit numbers, making a sandwich, brushing teeth, etc.).
2. **How much work? Visually represent to the student exactly how much work is to be done.** Providing too many choices can cause a child with ASD a great deal of frustration and anxiety in not being able to understand exactly how much work to complete.
3. **When am I finished?** The student needs to independently recognize when he is finished with a task/activity. The task itself may define this, or the use of timers or visual cues, such as a red dot, to indicate where to stop on a particular worksheet, has proven effective.
4. **What comes next?** Items such as physical reinforcers, highly desired activities, break times or free choice are highly motivating toward task completion. In some cases, being "all done" with the task motivates the child enough to complete it.

Examples of Various Types of Work Systems, from Easiest to Most Difficult

Left to right sequence—finished box/basket/folder to the far right: This is the most concrete level of "work systems" and involves placing items to be completed to the left of the person's workspace (e.g., a shelf, folder, basket/tub, etc.). The student is taught to take the items from the left, complete them at his work space in front of him, and then place the completed work to the right in an "all done" box, folder, basket, etc.

Matching—color, shape, alphabet, number: This would be a higher-level skill in that the person must complete his "work jobs" in a sequential order by matching color, shape, and alphabet letter or number coding system.

The **Written system** is the highest level of the work system. It would involve a written list of "work jobs" to be completed in a sequential order. Through the use of a visually structured teaching method, a student with ASD can learn to complete various tasks/activities independently, i.e.,

without an adult's physical or verbal prompt. Therefore many students with ASD can engage in "independent work sessions" for various periods of time throughout their day, in any environment (home, school, work), and on any skill area, such as academic/curricular, daily living skills, recreation and leisure, etc.).

Visual structure is the process of incorporating concrete visual cues into the task/activity itself. By doing so, the student will **not** have to rely on the teacher's verbal or physical prompts in order to understand what to do. The student can use his strong visual skills to get **meaning** from the task/activity without adult assistance.

Students with ASD tend to have difficulty processing the most obvious information in their environments and at times they may become overly focused or attentive to insignificant or irrelevant details. In order to help students with ASD identify and focus on the significant and relevant details of a task/activity, their daily activities/tasks need to be modified to incorporate the following:

Visual instructions: A student should be able to sequentially complete a task/activity by looking at the visual instructions given. Visual instructions will help the student to combine and organize a series of steps to obtain a desired outcome. Visual instructions may include the following forms:

The materials of the task define the task (e.g., putting rings on a stick with the rings located in a container on the left, and the stick standing upright on the right—again following the left to right sequence).

- A cutout or outline jig (e.g., an outline of a plate and silverware to direct the person where to place the silverware on a place mat).
- A picture jig (e.g., a picture of various toys or clothing items in specific locations for the child to match the real object, in order to learn to put away his belongings).
- Written instruction.
- Product sample or model (e.g., a completed art project).

Visual organization: Visual organization refers to the task of presenting the materials and space in an organized manner so that the sensory input or extra stimulation is reduced. Visual organization can be achieved through the following adaptations:

- Use containers to organize materials.
- Limit the area.

Visual clarity: The purpose of visual clarity is to highlight the important information, concepts, specific parts of the instruction and key materials. The nature of the task is designed to prompt the student to focus on the important details of the "work job" (task/activity/assignment). These details are highlighted through colors, pictures, numbers or words. Providing visual clarity promotes student independence rather than relying upon adult guidance. The most concrete level of visual clarity is achieved by limiting the materials needed to complete the task successfully (e.g., removing unnecessary, irrelevant or extra materials). Examples of visual clarity include:

- Color coding (e.g., assign each student a specific color and consistently use this color to teach the child to identify his environmental belongings more readily).
- Labeling.

Such a **structured teaching approach** allows the student with ASD to learn a process of focusing upon and following visual cues in various situations and environments, in order to increase his overall independent functioning.

Communicative Skills

Children with ASD learn to communicate and speak in a different way and not in a simple delayed manner. They communicate instrumentally, i.e., to get needs met, and have no use for socialization. Children develop the triadic communication using eye gaze, gestures, and the object even before they learn to talk—whereas children with ASD use gestures to communicate and use language as a last resort!

Minal is a 5-year-old child who speaks Punjabi. She attends a school where other kids speak Tamil or English. She wanted an adult to scratch her back because she had prickly heat. First she said in Punjabi "It is biting me" the adult who did not understand asked her "What is it?" Minal then made exaggerated chewing movements, the adult responded by checking her frock for ants! The girl then grabbed the adult's hand and put on her back and simulated scratching movements. The adult understood then that the child had prickly heat blisters.

Strategies to Encourage Communication

- Engage the child in a preferred activity, try to get him/her to make eye contact, and when in the visual field smile a lot and use very animated facial expressions and voice tones. When the child communicates during the activity, stop and encourage the child to reinitiate the activity.
- Teach phrases which are generic in nature "gimmejump, gimmegrapes, gimmebubble" as one word. Separate them after the word is used effectively.
- Use descriptive words to build vocabulary.
- Use of a Communication Dictionary. When children are nonverbal, many tantrums can be avoided if all caregivers respond to the child appropriately, this can be achieved by creating a communication dictionary with verbs and nouns in pictures.

Visually Mediated Communication

Many children with ASD are visual thinkers. They think in pictures and not in language. As one child described it: "All my thoughts are like videotapes running in my imagination. Pictures are my first language, and words are my second language." Nouns are often the easiest words to learn as the child can make a picture in their mind of the word. To learn words like "up" or "down," the teacher should demonstrate them to the child.

When a child is nonverbal or cannot express well, caregivers assume that she/he has nothing to say. The child gets forced or led into situations that she/he has no option or choice. A good way to judge would be to see how much freedom a child (of same age) without ASD has and proceed from there. The more decision making options a child has she/he will tantrum less.

Social-skill Curriculum

> Direct observation is a valuable data gathering tool, it must be done in areas that are nonacademic and triangulation involving all the concerned people should be done to get an accurate baseline.

Children with ASD experience deficits in social skills. Deficits in social skills affects a child's emotional well being which might lead to problems in academic achievement as well. The three areas: social, emotional, and academic are interconnected, however no one assessment instrument can address all the areas adequately. The parents, siblings, teachers, peers and the child can furnish information about the functional level of the student. Older students can complete a checklist that present a strength and weakness profile.

The four areas covered under social skills curriculum are:

Conversational Skills

Language learning can be facilitated if language exercises promote communication. If the child asks for a cup, then give him a cup. If the child asks for a plate, when he wants a cup, give him a plate. The child needs to learn that words make concrete things happen.

Strategies to Enhance Conversational Skills

Develop dialogue scripts: Dialogue scripts are used to visually script for the child each communicative partner's "lines" for a communicative exchange dialogue scripts can be used regarding normally occurring routines/activities, as well as in contrived situations designed to increase the child's social communication skills in a structured context.

Engage in joint activity routines: Joint activity routines are familiar highly predictable routines established with the child through repetition. These may include food-making routines, such as making Rasna or milkshake; symbolic play routines involving play themes, such as eating in a restaurant, sports activities, etc. These routines also incorporate familiar, repetitive communicative interactions, providing an effective language learning strategy for children with ASD. Joint activity routines allow for the child and adult to engage in meaningful, natural social communicative interactions within the routine of an activity. An additional positive outcome in using joint activity routines is that they teach the child that he can share experiences with others through communication.

Use of visual support strategies: Various visual support strategies can be used to teach the child verbal social communication skills, such as:

- **Turn-taking cards:** A visual turn-taking card is a card with "my turn" printed on it (a graphic symbol can also be used depending on the child's ability to understand various visual representation systems). The turn-taking card is passed back and forth between communication partners to visually represent each conversational partner's turn in the conversation.

- **Games:** Social communication games can be created involving various social communicative directives printed on cards, such as, "Initiate a new topic," "End the current topic," "Ask someone a question related to the current topic," etc. The cards are then placed face down on the table and the students take turns drawing cards and following the communicative direction.
- **Topic ring:** Various appropriate topics to initiate are printed with either graphics, or written words, on a collection of cards (approximately 3' by 2') attached by a metal ring (e.g., "What have you been doing this summer?"; "Have you seen any good movies lately?"). The child can keep these cards in his pocket or attached to his belt loop for visual prompt regarding appropriate topics to initiate with others. Typically these topics have first been taught in a small group setting, prior to having the child use this visual support strategy in less structured settings.
- **"Conversational rules" business cards:** Conversational rules, such as "Get the person's attention before speaking to him," "Let the other person have a turn to talk," etc., can be written on small cards for the child to keep in his pocket. These cards serve as visual prompts to help the child engage in appropriate verbal social interactions.
- **Act out stories:** Familiar stories can be acted out using manipulatives such as puppets, flannel board props, etc. Initially the adult can teach the familiar story using the props. The child can then be encouraged to "act out" certain characters of the story, beginning with a character that has repetitive lines, if possible, such as the Big Bad Wolf in the "Red Riding Hood". Use of this strategy teaches the child verbal conversational turn-taking skills through an easily understood, visually motivating activity.

Making Friends

Children with ASD appear rude. They really do not do so knowingly, they do not understand sarcasm and pun; this is attributed to "Theory of Mind," i.e., the inability to understand another person's thoughts and feelings. For instance, in one case, when the classteacher of grade 7 was absent, the children were making teasing remarks about her, which a student with ASD considered wrong as he was taught that one must respect teachers. When the teacher returned he promptly reported the matter resulting in the teacher sending the students to the principal for punishment!

The Hidden Curriculum

A school is a mini society, one needs to understand the social dos and don'ts to function efficiently. Juniors are ragged; there will be school bullies whom one would avoid, personalities of teachers and their varied expectations etc., are learned outside the classroom. Unless the child is paired with class buddies there is very little chance of his learning these aspects. Instead of considering special schools as placement options, supporting the child in the mainstream with services of special educators will determine the quality of outcome or better prognosis. An aide can also be tried during the initial stage of Inclusion and when the child is young. (An aide among older students will hamper the social network.) Providing a mentor for a high school student has worked to some degree in providing corrective feedback since he was not amenable to suggestions from parents.

Suggestions for the Teachers in the Classroom

In a regular school the students are taught by many teachers, each teacher's personality and expectations vary and the demands of a particular subject. If there is uniformity across periods, coping becomes easier for the student with ASD/Asperger's syndrome. The classteacher or any teacher with whom the child has rapport can act as the case manager.

State classroom rules clearly: Do you expect students to stand up till you tell them to sit, do they have to raise their hand to take a turn at answering, what are the consequences for being late or tardiness.

Wait period: Reduce idle wait period, by prior organization. As the child matures wait period will be better tolerated. Making the child with ASD stand in the front of the line, giving activities to do to "time pass" will help. Praise the child for waiting patiently.

Transitioning: When the child has not finished the work book, story problem or puzzle, give gestured and/or visual clues to the child, as to when the time is going to run out. A 5/10 minute "Hour" glass or a kitchen timer provides adequate orientation.

Talking on pet topics: Try to ration time. If the child asks repeated questions, write them down in a diary and the answer, and redirect him to the written work. When a topic is changed, cue the child or give a written summary sheet of the lesson.

Teach finished as a concept: The child not only needs to know when he will be finished, he needs to know how long before the task will be finished.

Change choice: Show the routine visually, if there is a change, announce it well in advance. Choice making options (even limited to two options) gives the student the feeling that he is in control. Choice can be a card which is symbolic; a blank card, or a joker from the card game can be used.

Keeping quiet in class: Children with AS need to know when they are expected to be quiet, when teacher is talking, when another student is talking, when you are working on your assignment, when everyone is quiet. For a younger child a card showing "Sh ... Quiet" can be a visual support.

Accommodations for Students

Accommodations are changes in materials or procedures that provide access to instruction and assessments for students with disabilities. They are designed to enable students to learn without the impediment of their disabilities, and to show their knowledge and skills rather than the effects of their disabilities. There is nothing about students with disabilities, or about instruction and assessment that would suggest that the number of students with disabilities using accommodations should change as they progress through school.

Textbooks and Curriculum

Books

- Provide alternative books with similar concepts, but at an easier reading level.
- Provide summaries of chapters.
- Provide interesting reading material at or slightly above the student's comfortable reading level.
- Use peer readers.
- Use marker to highlight important textbook sections.
- Use word-for-word sentence fill-ins.
- Provide two sets of textbooks, one for home and one for school.
- Use index cards to record major themes.
- Provide the student with a list of discussion questions before reading the material.
- Give page numbers to help the student find answers.
- Provide books and other written materials in alternative formats such as large print.

Curriculum

- Shorten assignments to focus on mastery of key concepts.
- Shorten spelling tests to focus on mastering the most functional words.
- Substitute alternatives for written assignments (clay models, posters, panoramas, collections, etc.).
- Specify and list exactly what the student will need to learn to pass. Review this frequently.
- Modify expectations based on student needs (e.g., "When you have read this chapter, you should be able to list three reasons for the 'Battle of Patliputra'").
- Give alternatives to long written reports (e.g., write several short reports, preview new audio-visual materials and write a short review, give an oral report on an assigned topic).

Classroom Environment

- Develop individualized rules for the student.
- Evaluate the classroom structure against the student's needs (flexible structure, firm limits, etc.).
- Keep workspaces clear of unrelated materials.
- Keep the classroom quiet during intense learning times.
- Reduce visual distractions in the classroom.
- Provide a computer for written work.
- Seat the student close to the teacher or a positive role model.
- Seat the student away from windows or doorways.
- Provide an unobstructed view of the chalkboard, teacher, movie screen, etc.

- Keep extra supplies of classroom materials (pencils, books) on hand.
- Use alternatives to crossword puzzles or word finds.
- Maintain adequate space between desks.

Instruction and Assignments

Directions

- Use both oral and printed directions.
- Give directions in small steps and in as few words as possible.
- Number and sequence the steps in a task.
- Have student repeat the directions for a task.
- Provide visual aids.
- Show a model of the end product of directions (e.g., a completed math problem or finished quiz).
- Stand near the student when giving directions or presenting a lesson.

Time/transitions

- Alert student several minutes before a transition from one activity to another is planned; give several reminders.
- Provide additional time to complete a task.
- Allow extra time to turn in homework without penalty.
- Provide assistance when moving about the building.

Handwriting

- Use worksheets that require minimal writing.
- Use fill-in questions with space for a brief response rather than a short essay.
- Provide a "designated notetaker" or photocopy of other student or teacher notes.
- Provide a print outline with videotapes and filmstrips.
- Provide a print copy of any assignments or directions written on the blackboard.
- Omit assignments that require copying, or let the student use a tape recorder to dictate answers.

Grading

- Provide a partial grade based on individual progress or effort.
- Use daily or frequent grading averaged into a grade for the quarter.
- Weight daily work higher than tests for a student who performs poorly on tests.
- Mark the correct answers rather than the incorrect ones.
- Permit a student to rework missed problems for a better grade.
- Average grades out when assignments are reworked, or grade on corrected work.

Tests

- Go over directions orally.
- Teach the student how to take tests (e.g., how to review, to plan time for each section).
- Provide a vocabulary list with definitions.
- Permit as much time as needed to finish tests.
- Allow tests to be taken in a room with few distractions (e.g., the library).
- Have test materials read to the student, and allow oral responses.
- Divide tests into small sections of similar questions or problems.
- Use recognition tests (true–false, multiple choice, or matching) instead of essays.
- Allow the student to complete an independent project as an alternative test.
- Give progress reports instead of grades.
- Grade spelling separately from content.
- Provide typed test materials, not tests written in cursive.
- Allow take-home or open-book tests.
- Provide possible answers for fill-in-the blank sections.
- Provide the first letter of the missing word.

Mathematics

- Allow the student to use a calculator without penalty.
- Group similar problems together (e.g., all addition in one section).
- Provide fewer problems on a worksheet (e.g., four to six problems on a page, rather than 20 or 30).
- Require fewer problems to attain passing grades.
- Use enlarged graph paper to write problems to help the student keep numbers in columns.
- Provide a table of math facts for reference.
- Tape a number line to the student's desk.
- Read and explain story problems, or break problems into smaller steps.
- Use pictures or graphics.

Other

- Use post-it notes to mark assignments in textbooks.
- Check progress and provide feedback often in the first few minutes of each assignment.
- Place a ruler under sentences being read for better tracking.
- Introduce an overview of long-term assignments so the student knows what is expected and when it is due.
- Break long-term assignments into small, sequential steps, with daily monitoring and frequent grading.
- Have the student practice presenting in a small group before presenting to the class.
- Hand out worksheets one at a time.

- Sequence work, with the easiest part first.
- Provide study guides and study questions that directly relate to tests.
- Reinforce student for recording assignments and due dates in a notebook.
- Draw arrows on worksheets, chalkboard, or overheads to show how ideas are related, or use other graphic organizers such as flow charts.

Behavior

- Arrange a "check-in" time to organize the day.
- Pair the student with a student who is a good behavior model for class projects.
- Modify school rules that may discriminate against the student.
- Use nonverbal cues to remind the student of rule violations.
- Amend consequences for rule violations (e.g., reward a forgetful student for remembering to bring pencils to class, rather than punishing the failure to remember).
- Minimize the use of punishment; provide positive as well as negative consequences.
- Develop an individualized behavior intervention plan that is positive and consistent with the student's ability and skills.
- Increase the frequency and immediacy of reinforcement. Arrange for the student to leave the classroom voluntarily and go to a designated "safe place" when under high stress.
- Develop a system or a code word to let the student know when behavior is not appropriate.
- Ignore behaviors that are not seriously disruptive.
- Develop interventions for behaviors that are annoying but not deliberate (e.g., provide a small piece of foam rubber for the desk of a student who continually taps a pencil on the desktop).
- Be aware of behavior changes that relate to medication or the length of the school day; modify expectations if appropriate.

Wherever inclusive education has worked, the credit can be placed on the shoulders of the administration and the educators. For to support the child in regular school and teach the school community to care; is the challenge and reward of inclusion.

FACT SHEET 1

About Autism Spectrum Disorder

Autism is a biological disorder of the brain that affects 1 in 500 children. Three main areas of development are impaired: communication, social development, and the use of language. Autism encompasses a broad range of disorders that may range from mild to severe. Autism spectrum disorders

(ASD) include Asperger's syndrome, Pervasive Developmental Disorder Not Otherwise Specified (PDD-NOS), Rett syndrome (which affects only girls) and autism.

A wide range of behaviors can be seen in the areas of speech, social communication, and social interaction. In the area of speech there may be none or speech may be delayed. Repetition of words (echolalia) may be used in place of normal verbal communication. Gestures such as pointing to requested objects or waving bye-bye might be absent. Entire lines of text from books, movies or computer games may be repeated out of context for no apparent reason. The child has difficulty holding a conversation or steers the conversation to one subject.

In the area of social communication, there may be a lack of response to verbal requests, no response when the child's name is called, an absence or fleeting eye contact, difficulty transitioning from one activity to another, and not understanding facial expressions or emotions.

The child may not be interested in socially interacting with peers or adults. There can be a lack of imaginative play. Repetitive activities are often engaged in for extended periods of time such as rewinding videos, stacking blocks, or lining up toys. The child may be aloof or indifferent to other people. Names for people are often missing or there is pronoun confusion.

What Causes Autism and Can It be Cured?

No one is sure what causes autism but it is likely caused by both genetic and environmental factors such as vaccines or environmental toxins. At present, there is no known cure for autism but many parents do find their children improve with the elimination of gluten and casein from the diet as well as adding nutritional supplements.

FACT SHEET 2

Asperger's Syndrome

Asperger's syndrome (AS) is a neurobiological disorder, which falls at the "high end" of the autistic spectrum. Individuals with Asperger's syndrome can have symptoms ranging from mild to severe.

Individuals with AS can exhibit a variety of characteristics and the disorder can range from mild to severe. Individuals with AS show marked deficiencies in social skills, have difficulties with transitions or changes and prefer sameness. They often have obsessive routines and may be preoccupied with a particular subject of interest. They have a great deal of difficulty reading nonverbal cues (body language) and very often the individual with AS has difficulty determining proper body space. Often overly sensitive to sounds, tastes, smells, and sights, the person with AS may prefer soft clothing, certain foods, and be bothered by sounds or lights no one else seems to hear or see. It's important to remember that the person with AS perceives the world very differently. Therefore, many behaviors that seem odd or unusual are due to those neurological differences and not the

result of intentional rudeness or bad behavior, and most certainly not the result of "improper parenting."

Though individual variances will be present there are certain characteristics that are common to all children with autism and Asperger's Syndrome. Superior rote memory and visual spatial skills, preoccupation with some pet topic, perseverance in getting what they want, single minded pursuit, extreme reaction to sensations (not proportionate to the actual affect) insistence on sameness, catastrophic or panic reaction to change, lack of sense of humor, social naïvete, stickler to following rules and regulations, perfectionism, etc., are some of the features that will interfere with learning in the classroom.

By definition, those with AS have a normal IQ and many individuals (although not all) exhibit exceptional skill or talent in a specific area; and because of their high degree of functionality and their naïvete, those with AS are often viewed as eccentric or odd and can easily become victims of teasing and bullying. While language development seems, on the surface, normal, individuals with, AS often have deficits in pragmatics and prosody. Vocabularies may be extraordinarily rich for some children. However, persons with AS can be extremely literal and have difficulty using language in a social context.

FACT SHEET 3

The Problems of Communication

Communicative competence involves correct usage of body language, personal space, affect, voice modulation; and all these are very culture specific. In some cultures, showing emotions in the face amounts to losing one's face, in another gesticulating with hands while talking is not appreciated, yet another culture inculcates the value of not making direct eye contact while addressing members of the opposite gender; there are unspoken rules as to the body space one has to keep. Children with autism/Asperger's syndrome need explicit training to master these concepts.

Conversation Drills

Contingent words drill

It can help the child to learn more vocabulary words in an enjoyable way. This way even a child with limited language can have a "conversation" in a game format.

Topical conversation drill

It helps the child to talk about various topics. Teacher or parent should in the beginning maintain the topic by asking lead questions.

Maintain conversation drill

The student is given a cue card with the questions that the teacher can prompt. Here maintaining a conversation by asking a question is taught. This is a comparatively easy skill to teach. What did you do? What did you see? What did you eat? What did you drink? Did you play?

Teaching conversational punctuation marks

Unlike a written sentence or passage where the punctuation marks are explicit, conversational punctuation marks are not visible. Hence the rules governing conversation have to be taught as a language lesson. At the conversational level it is assessed whether the child can ask a question, make a statement, maintain a conversation by taking turns, yield a turn, and the number of such turn taking attempts. Mentally evaluate the following:

- How does the child make opening statement?
- Can she/he close a conversation?
- Does the child appear rude in tone, or in words?
- Does she/he disagree appropriately?
- Is she/he aware of topic change?
- Does she/he persevere on any pet topic?

It is very important to elicit a fair sample of spontaneous communication, taking care not to dominate the conversation. Whether the child possesses the skill to interpret nonverbal communication of the partner and displays appropriate body language; eye gaze, affect and maintenance of physical distance are noted.

Conversation skill includes, noticing the nonverbal cues; whether the listener is paying attention or appears bored, not to go too close to another person while talking, give eye contact, usage of correct prosody, etc. What children developing normally master effortlessly, children with AS have to be taught (even in a paper–pencil–drill–format) one-on-one and later practiced in real life. Getting the child a buddy to transfer the skill in real life will be of great help. Role play with peers is also very effective. With adolescents a good deal of tact is needed on the part of the caregiver to teach social skills.

FACT SHEET 4

Social Communication Skill

Social communication skill refers to the correct application of conversational skill within a context. Age is a factor that decides what is socially appropriate or acceptable, for while a child of 5 years can throw a tantrum, or may behave in a rude manner, the same will be unacceptable at a later age.

Children by age 10 have their own private life, some facts are withheld from parents, and teachers and they are closer to their age peers or siblings. Tattling is a major problem class peers have to put up with when they deal with peers with Asperger's Syndrome, compounded to the fact that the children with AS have a strong sense of right and wrong. When students talk disrespectfully about teachers the child with AS, if within earshot, will be sure to report. One high-school class party became messy when the students smoked a cigarette, and the student with AS reported this to his mother—subsequently all mothers came to know of the incident and the student was isolated in school.

Rude and OK Statements

Children with AS do not understand when to use direct or indirect speech. In fact, sublimities are lost on them, hence words must be chosen with care. One child remarked to a lady who dyed her hair "Yesterday your hair was white, today it is black!" The child needs to be taught that making personal statements are rude.

Adolescents with AS may as a result of some of the above factors become depressed, anxious or aggressive. Fostering social networks will possibly save the child from this condition in later life, thus it becomes a major responsibility of the teachers and school administrators to guide the child through the social maze of our society. Teachers may shrug this off by saying "I teach Physics, English or Math," implying thereby that teaching life-skills is not part of their agenda!

It is the combined effort and talents of all staff members to problem solve and may be even approach the child through various media like art, music, computers, physical education, etc. Children with AS experience a high degree of internal stress and anxiety, and we as parents and teachers should not contribute further to this.

Just Me

I am Venkatesh. I was born on March 13, 1989, at Mills hospital, San Mateo, California. We moved to India in 1993 because my father got transferred. My sister and I joined school at Chennai. I went to a neighborhood kindergarten school upto the 3rd grade. Now I am in my 9th grade. I do quite well in my studies. I also go to NIIT Leda classes. I have learnt MS Word, MS Excel, MS power point, Internet, HTML.

My hobby is arranging my train shelf. I have a big collection of trains. I arrange it like different stations. I also collect tickets from all my relatives. I love to paint my trains.

I like:

- Trains, trains, trains ...
- Ice cream—vanilla, mint, chocolate, strawberry

- Mangoes
- Pickles and spicy stuff with curd rice
- Andhra meal
- Pizza
- *Harry Potter, Kaho Naa Pyaar Hai, Alaipayuthey*
- Maths, English, Chemistry
- Telugu letters

I dislike:

- Silk sarees
- Dog barking
- Butterscotch ice cream
- Noise in the marriage house

I have traveled a lot with my parents and sister. My favorite city is Delhi because I got to travel by the excellent Delhi metro train. When I grow up I want to be a Travelling ticket examiner because I will get to travel by train a lot.

I have a special talent. If you tell me your date of birth I can tell the day.

Source: Venkatesh Ramesh.

The Team Approach

This account presents an instance of how a special educator, parents, school, and the child worked as a team to achieve very significant progress in a high functioning autistic child with Asperger's syndrome. We start off by describing the achievements today compared to where we started, and then present a description of the role played by each party in the success. We have abstracted the process that we believe caused the success and conclude with the lessons we have learnt.

Where We Started ...

The child was born in US in 1989. There was a speech delay but the auditory tests in 1991 revealed everything was physically normal. We returned to India in 1993 and he started his school here. He showed tremendous potential in computers and memory but the potential was never realized in school. Typical symptoms shown at school were not sitting in class, no socialization, almost empty notes indicating no following in class, illegible handwriting, and marks swinging wildly in the lower brackets. We approached our pediatrician and through him, we got in touch with a pediatric developmental specialist, who gave exercises to improve basic motor skills, eye contact, etc. We were then referred to a special educator, who worked on all the aspects like hand-writing, self-esteem,

(Contd. on next page)

communication, etc. The special educator also bridged the school's knowledge gap in special needs and strategies to provide the needs with no undue burden for the teachers.

Where We are Today ...

Today, the child is "CBSE ready," with consistent, predictable, and well above average performance in most subjects, being able to reasonably socialize and participate in class, and perform independently in extra classes like computer classes and even win some competitions.

The Players and Their Roles

The above success would not have been possible but for a concerted, focused and committed team effort from all concerned. First of all, the child is a committed, sincere child, conscientious and *motivated* to achieve. This basic commitment from the child was augmented and enhanced by tremendous cooperation from the special educator, parents, teachers, and peers. The table below lists the major roles played by each of the contributors, especially highlighting the extra mile each went and the mutual support provided by others.

Roles Played by the Team

Contributor	*Role, Extra Mile*	*Support from Others*
Child	• Willingness to change • Acting on feedback • Perseverance • Not complaining	• Consistent all round support
Special educator	• Addressing root causes • Learning style analysis and motivating the child to gain confidence • Educating school on special needs, awareness that "being special is not bad"! • Suggesting home program for parents	• Receptive school • Timely feedback from school and parents
Parents and siblings	• Diligent follow through of instructions and feedback from all quarters • Constant support, reinforcement and encouragement • Objective analysis • Persistence! • Unflinching faith	• Consistent all round support • Communication from peers and teachers • Root cause guidance from special educator

Contributor	*Role, Extra Mile*	*Support from Others*
Teachers	• Accepting uniqueness • Not losing sight of the eventual goal (of providing independence) • Combining passion, compassion, and firmness • Identifying and encouraging peers • Providing detailed feedback that was asked for	• Awareness created by special educator • The entire set of teachers working as a team, providing appropriate transition to a new teacher • Reinforcement at home
Peers	• Understanding the special needs • Not "teasing" • Accepting the child as "one of us" • Communicating with parents any gaps in class	• Identification of appropriate peers by the teachers • Ongoing support from teachers to provide special help • Ongoing communication by parents

The Process towards the Progress

We have observed that the progress in any dimension goes through some distinct phases. First, we need to establish the *correct norms* of what is acceptable and what is not. There has to be a consistent understanding and appreciation by the child as well as all the constituents what these correct norms are, including objective means of verifying conformity to the norms. Next, we should strive for *conformity* to these norms. An important part of this is measuring the conformity by *objective* means. Such a measurement should lead to *consistency*—i.e., the norms are adhered to consistently. This would build a sense of *confidence* in the child that he is "OK" (i.e., like other children). This confidence would fuel the *curiosity* in the child to explore and experiment and this would lead to the eventual goal of *creativity*.

To take an example of the progression through the various phases consider the issue of physical attention in class. A norm could be "you should sit in class with other children and not move about." This has to be consistently appreciated by the child as well as others. The child would then try to "conform" to this norm. An objective measure is "how often does the child move out of (or around) the class? Having conformed to consistent and acceptable levels of staying in the class, the child feels interested to participate in what is happening in the class. This will usher in confidence to answer questions and take the child to next level of curiosity.

Common Themes

What worked always had four major steps—preparation, prioritization, execution and tracking, and fine tuning.

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1. Preparation

   (*a*) Studying the strengths and needs of the child, through a *holistic* evaluation in the areas of cognition, speech, language, social/emotional skills, and motor skills.
   (*b*) Profiling of the child's learning style.
   (*c*) Discussion between parent, special educator, and school about the child's total personality and his specific needs and the roles of each.

2. Prioritization

   (*a*) Recognizing which strengths have been established.
   (*b*) Identifying which strengths need establishment.
   (*c*) Prioritizing the immediate needs.
   (*d*) Building upon the strengths to meet the needs.
   (*e*) Working towards areas (based on his strengths) that will give short term/immediate success.
   (*f*) Preparation to meet future needs.

3. Execution and tracking

   (*a*) Establishing the information that needs to be tracked, based on the prioritized needs at a given point.
   (*b*) Explaining the rationale behind what is being done, especially to the teachers who are not trained as special educators.
   (*c*) Providing simple tools for the teachers that minimizes the "special" work they may have to do for the child or for tracking progress (e.g., simple to fill check lists).

4. Fine tuning

   (*a*) Based on the information derived from tracking, fine tuning or changing the approach as necessary.

Some Common Dos and Don'ts We Followed during the Progress

We would like to summarize our learning from this very satisfying endeavor in the form of some "dos and don'ts." These are not meant to be prescriptive dogmas for others but rather the most common patterns *we* found most useful for our child.

Do

Prioritize the needs

It is not possible to confront all the problems in one go. We have to pick our targets carefully and then go after them. For example, in the initial days, it was more important for him to conform to "accepted behavior" of staying in class than trying to excel in academics. Once that was achieved, we had to

strive for acceptable grades in each subject and pick up those subjects where maximum difficulty was there and give extra attention. This prioritization helped reduce the daunting tasks to more manageable smaller tasks.

Pay attention to detail and go to root causes

Often, the evaluation systems in schools or outside only point to symptoms. It is important to pay attention to details and identify root causes. For example, in Math, it was observed that specific types of mistakes were frequently made. Once these holes were plugged, the overall performance started stabilizing and improving. A lot of this analysis had to be done by us, his parents.

Give specific requests to teachers

Teachers may not know the specific reasons why some information is required or how we feel the teacher should address the problem. The more specific the information we give to teachers, the better is the quality of output. For example, in the early days when he would not focus on continuously writing the exams, we requested the teachers to make him sit in the front row and give him a nudge if he started wandering. Over time, he started writing the exams by himself without the nudges. Appreciating the magnitude of teachers' tasks in the general classroom and minimizing what they need to do "special" by giving specific instructions motivated the teachers to extend cooperation more effectively as they did not feel the burden as much.

Codify specific instructions to the child in the form of simple "rules"

Since the child likes predictability and familiarity and since the real world is not always predictable, it is important to model the real world expectation in terms of simple "rules" that the child can relate to. For example, in order to convey the message that he should not unnecessarily touch anyone, a rule like "no passing microbes" (something that he had seen in a TV show) got the message across and made compliance easier. But it is important to make the rules simple and the exceptions even simpler! Once a rule is established, it is extremely tough to build in exceptions!

Cherish and celebrate every small achievement

This is more easily said than done! Often, the thought of what lies ahead is more daunting than what is achieved! But, cherishing and celebrating every small step does wonders to the child's morale and to our own! It also provides proof points to the school that motivates them to feel their effort is paying dividends.

Teach the child to savor and relish success

Once the child himself starts relishing the successes, his approach, and confidence increases significantly, and this makes everybody's job easier!

(Contd. on next page)

Do Not

As a parent, play the professional yourself!

As parents (however objective we are), we have our own limitations and would not know how to identify root causes or tackle a problem. For example, when there is a problem in handwriting, our approach would have been to make him copy a couple of pages everyday. The Developmental Pediatrician and Special Educator were able to address the basic issues like spacing and fine motor coordination and solve them through playing on the Jungle Gym or using beads and play dough. How could we have even imagined these to be solutions for good handwriting! It is better to consult the professionals.

Assume everybody will understand

It is useful to accept the fact that not everybody will understand the issues or problems faced. It is most common for people to "label" the child rather than focus on the special skills or needs. There is no use getting upset over this! So long as people who matter care and understand, it is best to ignore any comment made by others, however painful. Having said this, one should also admit that this is easier said than done from a parent's perspective!

Easily rationalize that "he can't do it because he is special"

If there are any "problem areas" that may exist, it is easy for anyone to attribute it to "his being special." For example, when the demands of academics are tough and marks in Math were going down, it was easy to attribute this to a learning difficulty. But a closer analysis revealed that the entire class had found the going tough in Math that session!

Try to solve too many things at the same time

When working with a child with special needs, it is very easy to look at the things not yet accomplished and try to solve them all at one go. The fact is such an approach will only entangle and complicate the issues further. Trying to solve too many things at one time will dilute the efforts, reduce the likelihood of success and only demotivate the child as well as everyone.

Lessons Learnt

- Every child has a potential. The challenge is in *systematically* bringing out the talent and potential.
- Team work is essential! All go an extra mile but together we take a giant leap!
- Open mindedness, planning, and systematic follow up and feedback are essential ingredients to success.
- Teachers' influence on the child and the peers is very significant.

- Peers (children) motivated by teachers form an even more potent force.
- Children need
  - ♦ empathy not sympathy;
  - ♦ to be given opportunities and challenges, not compromised goals.

Conclusion

We believe that with proper focus and coordinated teamwork, a child with this profile (High Functioning Autism/Asperger's) can be included even in a challenging environment like CBSE. There is hope when you try!

Source: Ramesh Gopalaswamy and Nirmala Pandit.

13

SCHOOLS IN RURAL AREAS

Indumathi Rao

When our team first met Lila, she was 2 years old and was referred to a local NGO for the early stimulation program. They knew rightaway that if an inclusive program could be made available for Lila when she turned 3, she would be able to become independent.

Lila lived in a small hut on the edge of a village with her grandmother. Transportation was always a problem. Her grandmother could not take the bus often due to her poor health (and financial condition) and there was nobody else to take her either. The doctor at the local primary health care center was very encouraging and would express his surprise at the remarkable progress Lila had made since the time he first saw her. He had never believed she would survive more than a few months, and yet here she was gaining new skills slowly but steadily. While the physician was supportive, he consistently urged the grandmother not to plan too far ahead or get her hopes up.

Lila had multiple disabilities including deaf-blindness, mental retardation, cerebral palsy, and serious health impairments. There were few choices for help in rehabilitation, leave alone programs in the community. The nearby town did not have a preschool or even a child care program. The local District Primary Education Program (DPEP) participated in a primary school special education program which was 35 km away in a larger city; Lila's grandmother did not feel comfortable with any program that was so far away. The local NGO offered Lila a home-based program.

The team worked with Lila till she turned 3. At three-and-a-half-years, they arranged for her to attend the local *Anganwadi* (Integrated Child Development Scheme) three times a week, which she missed frequently due to illness. She was alert to the children around her and they always looked forward to her arrival. The staff grew more comfortable with her special health care needs and tried to at least make her sit with the other children as they recited poems or the alphabets. A paratherapist from the NGO visited both at home and at the *Anganwadi* to ensure everyone was participating in Lila's program.

Lila's challenges were many—the severity of her disabilities, her grandmother's limited resources, her poor prognosis, the limited access to community resources and the remoteness of her habitat. Yet, Lila proved her physician more than wrong by living; she showed many of the educators in the

area that inclusion could (and should) be available anywhere for anyone if it is the best program for the child. It was difficult and it did not occur immediately, but it did happen. Everyone on her team overcame both personal and agency barriers by working with Lila, and Lila went to school like everyone else.

> There is no evidence that children with certain handicapping conditions or levels of disabilities make more or less good candidates for integration. Now obviously children with severe disabilities require more accommodations to maximize their growth and development. Here we have the root of the conventional wisdom that children with mild handicaps are better candidates for integration. What is true is that they (children with mild disabilities) may, only may, require less change in the structure and function of current service delivery (than children with severe disabilities) to meet their learning needs.
>
> —Philip Strain, at the National Conference of the Division for Early Childhood, later published in the *Journal of Early Intervention*, 1990

Many disabled children do not attend school for the same reasons as nondisabled children in the rural areas: lack of money to pay for the materials and distance. However, sometimes parents do not believe disabled children can or will benefit from education. Teachers may deny entrance to classes if a child has a disability the teacher suspects is contagious; often the school is physically inaccessible for mobility-impaired children. It is, therefore, essential that parents, teachers, and fellow classmates be given information to encourage the inclusion of disabled children and to adapt school facilities and school activities.

The schools in rural areas have only basic facilities. They are mostly understaffed. Qualified teachers prefer to work in schools in urban areas. The reasons are difficulty in traveling, finding suitable accommodation, and the lack of basic facilities in rural schools. Children have to travel far to reach the school. Proper roads are non-existent in most rural areas and hence no public transport. Therefore the children have to walk several miles to reach the school. Normal children somehow manage to travel to school. The disabled child has to depend on parents or an adult in the family to take her/him to school.

At the school, the disabled child experiences the inaccessibility of classrooms, toilets that cannot be used and students who do not appear to understand their problem. Schoolchildren are unaware of how to treat a child with a disability. The disabled child becomes isolated in school. Little by little school life becomes an unhappy experience. The child becomes a school dropout at a very early stage.

Prejudice and Ignorance—The Greater Barriers

Attitudinal barriers continue to oppose the disabled in society. The traditional viewpoint, which regards the disabled as a burden who cannot cope with life by themselves, and therefore must be

overprotected or discarded is widespread, even today. At times this even works as the proverbial excuse. Thus, we can't do inclusive education because:

- Attitudes are negative—or "until attitudes change ...".
- Disabled children are not ready (e.g., not toilet trained).
- The people are illiterate, they cannot understand.
- There are other priorities.
- The educational systems is too rigid, and hence cannot work.
- Buildings are not accessible.
- No trained personnel.
- No transport—distances are too great.
- No money.
- No equipment or materials.
- No special provision in policy or legislation.

These barriers or excuses could be true of both urban and rural settings. Statistics reveal that in the rural areas, approximately 80 percent of the population has been born there, whereas in the urban setting it tends to be more in reverse with a large migrant population. This rural stability, with its strong traditional and cultural practices, provides a very positive setting within which to promote inclusive education.

Some of the Advantages

Barriers	Outcome
Children are passive learners.	Children become active learners.
School attendance is poor.	Children's participation leads to improved attendance.
Traditional attitudes prevent disabled children from attending school.	Children challenge these attitudes by convincing the parents to send their children to school.
Traditional practices prevent children from expressing their opinions.	Children are introduced to democratic practices in the classroom and become very vocal.
Curriculum is not relevant to local needs.	Children help to transform the curriculum to suit local needs.

Guidelines for School Administrators

- **Teachers and pupils are the greatest resources available for promoting inclusive practice:** This is true in all contexts, but is perhaps more obviously the case in impoverished rural areas, where school buildings are poor, teaching materials scarce, and teachers have little training.

- **Build on existing practice:** Lessons learnt from the UNESCO special needs in the classroom project indicate that finding ways of making better use of local knowledge and building on existing practice is where all development must start.
- **Teachers invariably know more than they use:** Teachers therefore need to be helped to learn from their own experience and from that of their colleagues and by building upon what they know, and what they understand about what works and what does not. In this way teachers can begin to take more responsibility for their own professional development.
- **Schools are problem-solving organizations:** Essentially the more problems that teachers encounter, the more successful they are likely to become at solving problems, or overcoming barriers. Problems can therefore be seen as opportunities for collaborative learning. In the context of collaborative problem-solving, including children who have impairments, or who have been identified as impeding the process of learning (could be absenteeism due to a chronic illness, or disruptive families), can therefore be seen as an opportunity for the whole school to learn and develop, and so become more effective.
- **Evolve the practice of participatory learning—involving children in planning lessons:** Padma, a schoolteacher began to involve the children in lesson planning and was amazed at how imaginative their ideas were and how committed they were towards learning. As her teaching became more learner-centered, she found that her role as a teacher changed. She no longer had to stand in front of the class for hours talking. Instead she became a facilitator of learning.
- **Involving children in motivating children and their parents:** Here again, Padma found that when children were involved in conducting surveys to identify those children who were not in school and to establish the reasons for their exclusion, they were far more convincing in ensuring that the identified children actually attended the school.

Involve Parents as Partners

Whole-school approach: It is particularly important in rural areas for schools to become self-sufficient in responding to children with impairments.
Specialist support: If specialist support exists, it should not be based in individual schools, but rather at district or national level.

The strength of successful rural schools lies in good individual follow-up of individual children; promotion of parental involvement; promotion of parents' independence in the learning; coping with large class sizes and few resources; and acting on a personal basis. Decentralizing education by involving the stakeholders leads to imaginative and innovative methods of overcoming very severe obstacles and dealing with daily hardships—so well-known to most village schools. As one teacher said, "this program ... benefits all children .... My job satisfaction has improved; I enjoy teaching more even though I work longer hours. The program has equipped us with different techniques for our so-called normal pupils." Parents strengthen this observation by facilitating services in the home, thus taking part ownership of the learning process.

School Readiness

School readiness of children is considered one of the key factors for the success of primary education. This is especially true in the case of children with special needs. Children above 6 years of age transit to the main school only after receiving existing preschool, ICDS and Chinnara Angala intervention or home-based training using the Indian postage to facilitate school preparation. This support helps prevent academic failures.

Environmental Accommodations

Young children with disabilities frequently require assistance in moving and may use a wheelchair, a walker, adult support, or other methods for mobility. Some children may need the environment organized in a way such that running in the classroom is discouraged and confusion reduced. Planning needs to occur concerning the routes the child will take to classroom areas, the bathroom, the lunchroom, the playground, and arrival and departures from the building. Some specific environmental accommodations include:

Guidelines for Determining Routes for Movement

- Determine where the child will be throughout the day and the routes taken by the class.
- Identify the routes for a wheelchair or the child with crutches.
- Identify areas that might be difficult or dangerous for a child with physical challenges.
- Plan strategies for organizing a child's movement through spaces.

- Clear pathways.
- Tables organized in the classroom for mobility and access.
- Doors kept shut.
- Areas defined by a mat or shelves.

Positioning involves providing the child with external supports to help him/her compensate for lack of stability. These could be adapted using locally available material. Many children with severe and multiple disabilities require good positioning to facilitate motor function, promote normal muscle tone, stabilize body parts, and maintain alignment of the body. For example, supportive seating adapted to allow for head movement and provide trunk support might give a child the chance to practice head control during story time. However during mealtime, working on head control and finger feeding might be too demanding on the child, so the additional head support may be needed.

It should be emphasized that the position of a child should be as natural as possible and similar to the way in which other children in the classroom might be positioned. Easily obtained materials that can be used to assist in positioning and modify equipment include; towel rolls, pillows, and blankets. Wedges and bolsters are examples of manufactured products used for positioning. Sandbags and weights are sometimes used to help children maintain a position or to stabilize their bodies.

Suggestions for In-service Training Skill Development Regarding Positioning

- Provide all staff with opportunities to handle and position the child in order to become comfortable in working with a child with disabilities.
- Ask parents or caregivers for their suggestions on positioning strategies based on their experiences, previous school or therapy received or the home environment.
- Determine how positioning can be achieved through the use of an adult or peer's body, specially designed furniture or equipment, or supportive material such as towel rolls, pillows or wedges, depending on the available resources and the child's needs.

When dealing with special equipment, remember to:

- Identify a core set of materials and equipment to have on site.
- Assess with each use the appropriateness of the positioning equipment as well as the need. Children grow and their need for different pieces of equipment changes. Check with the staff to see if a particular piece of equipment is working.
- Identify storage area for the equipment when not in use.
- Teach the staff to use the equipment safely, adjust the equipment, and secure the child in the equipment.
- Decrease the intrusiveness of the equipment by planning ahead for its use.

Curriculum Adaptation and Instructional Strategies

In special education literature, curriculum adaptation, and instructional strategies are based upon the assumption that not all children need to be doing the same thing at the same time; varying types and degrees of participation is appropriate; and curriculum and school activities should be adjusted to accommodate the child's individual needs. Early childhood special educators advocate that instructional goals and objectives need to be embedded within the normally occurring routines and contexts of home, day-care, and kindergarten or preschool. Since children with disabilities need intentional instruction, it is important in inclusive settings to make adaptations that focus on maintaining an intense level of instruction, purposeful participation in activities, and educational achievement.

The adaptation process involves determining the nature of adaptations and supports needed, defining how instruction will occur, and addressing how to maximize instructional inclusion of the child with disabilities into the preschool classroom. This process needs to be used by the team so that IEP objectives are familiar to all staff, opportunities to incorporate instruction related to those objectives occurs, and advance planning can be done. Even with planning, a modification may not work or a change in plans may occur, in which case the staff needs to develop skills for modifying and adapting the curriculum activities at the time of need. Three concepts provide general guidelines for instructional adaptations:

Same Activities and Materials—Different Objectives

Sometimes the same materials and activities can be used for multiple objectives depending on the needs of the child. While the typical peer is working on a classification concept of sorting objects by size, a child with a disability could be participating in the same activity but be working on labeling the objects, reaching, and grasping the objects or turn taking with a peer. For both children, social opportunities are provided as they work on their individual objectives.

Same Activity, Materials, and Objective—Adaptive Responding

The child with a disability may understand a concept, but have difficulty with the speech or motor component of the activity. For example, a child with disabilities may be able to discriminate shapes, but cannot physically sort them. Using eye gaze the child might be able to indicate what shape goes on next. If a peer is also learning to sort shapes and takes a turn, then both children have the same objective, but different means for expressing them.

Same Activity, Same or Different Objectives—Adapted Materials

Sometimes it is necessary to physically adapt instructional or play materials to facilitate the child's participation, increasing stability, ease of handling, accessibility and/or distinctiveness.

Adapting General Material for Special Use

- Glue bicycle tube piece to the bottom of objects to assist in the prevention of items from sliding on surfaces.
- Increase or decrease the size of the materials.
- Arrange materials on lower shelves for easier access.
- Provide materials which have multi-sensory components (tactile, visual, olfactory, gustatory, and auditory).
- Use a vertical surface to place materials within a child's visual field, to reduce glare on materials or to place materials within a child's movement pattern.
- Provide materials which have a strong contrast to surrounding materials or work surfaces add handles or attach a string to materials, so that those items can be picked up or retrieved.

Adapting the Curriculum

Innovate by reducing

- Whole-class, teacher-directed instruction, e.g., lecturing.
- Student passivity: sitting, listening, receiving, and absorbing information.
- Encouraging and rewarding of silence in the classroom.

- Classroom time devoted to fill-in-the-blank worksheets, dittos, workbooks, and other "seatwork."
- Student time spent reading textbooks and basic readers.
- Attempt by teachers to superficially "cover" large amounts of material in every subject area.
- Rote memorization of facts and details.
- Stress on the competition and grades in school.
- Tracking or leveling students into "ability groups."

Innovate by increasing

- Experiential, inductive, hands-on learning.
- Active learning in the classroom, with all students doing, talking, and collaborating.
- Emphasis on higher-order thinking; learning a field's key concepts and principles.
- In-depth study of a smaller number of topics, so that students internalize the field's way of inquiry.
- Time devoted to reading whole, original, real books and nonfiction materials.
- Responsibility transferred to students for their work: goal-setting, record-keeping, monitoring, evaluation.
- Choice for students; e.g., picking their own books, project topics, team partners, research projects.
- Enacting and modeling of the principles of democracy in school.
- Attention to affective needs and the varying cognitive styles of individual students.
- Cooperative, collaborative activity; developing the classroom as an interdependent community.
- Heterogeneously grouped classrooms where individual needs are met through inherently individualized activities, not segregation of bodies.
- Delivery of special help to students in regular classrooms.
- Varied and cooperative roles for teachers, parents, and administrators.
- Reliance upon teachers' descriptive evaluation of student growth, including qualitative/anecdotal observation.

Case Report of Karnataka

Once in a school in a village called Thyamagondlu in Karnataka where CBR Network was implementing the Integrated Education of Disabled Children (IEDC) scheme, the Project Coordinator went to the school 15 minutes before time. She sat there watching children coming to school with their books and bags. The Headmaster was a very young man in his early-20s and newly married. He came on his brand new bicycle. As he entered the main door, he asked one of the students to bring the wooden ramp he had specially made for his bicycle.

The student promptly brought the ramp and fixed it to the stairs. There were about five steps. The Headmaster pushed his cycle using the ramp and neatly parked it near the side of the classroom wall. The student removed the ramp and kept it back. The Headmaster saw the Project Coordinator

and greeted her with a *namaste*. They started talking about the integration of children with disabilities in the school. As they were doing so, a physically challenged boy of around 12 years reached the school. His father had brought him on his cycle.

The boy entered the school building with great difficulty, as there were five huge steps, which made entry very difficult. Children helped him climb the steps. The Headmaster was also watching this scene. The Project Coordinator asked the Headmaster, "You bring your cycle very easily because the ramp was there, but this boy has difficulty in entering, doesn't he?"

The Headmaster could not see her point immediately and said, "Yes madam, that boy has polio, he cannot climb steps." She joked, "Your cycle could also not climb the steps?" He said, "Yes, you are right." She egged him on, trying to help him think. "But you could lift the cycle by building up a ramp." Then suddenly he realized what was being conveyed. "Madam I am sorry I thought so much about my cycle—a lifeless object. If only I had left the ramp a little longer, the boy could have entered using the same ramp!!"

Other village schools in Karnataka have the following tales to tell:

In Varthur, the teacher was busy in the class. The Project Coordinator asked her, "How are you? I come from the CBR project." Immediately she asked all the IED children to stand up. Who were these IED children? A new label? A new brand? This is how the teacher identified children with disabilities. And note they were the only ones who were asked to stand up!

In another village in Kanakapura, in a government school, there was not a single child with disability to be seen. The school was part of the project where IEDC was being implemented—so there should have been at least a few if not plenty. When asked of the teacher as to their whereabouts, she said without any hesitation, "They have been sent back home. Their teacher is on leave for a week. So I have asked them to study at home instead of wasting time coming to school!"

These narrations are reflective of some of the reasons as to why well-intentioned government schemes do not work. They do not because they do not take the classteacher into confidence. The programs are heavily dependent on resource teachers, and as a result the system continues to segregate and label children as those with special needs.

In IEDC, the child is viewed as the "situation to be modified" and not the education system. As a result all measures are taken with a view to keeping the "general education system" intact, disembodying in the process the child. Thus, on the whole the IEDC scheme was like velcro stuck to the mainstream schools. Teachers were still using the terms "taking classes," "covering portions," "finishing syllabi," and this teacher-centered approach has been a major barrier to inclusion.

When teachers are asked, "Do you know why you are teaching this concept? Do you know about the curriculum you are using?" Teachers pointed to textbooks. When the team tried to help them to play with the methodology to reach curricular goals, teachers seemed bewildered, and counter questioned, "What will we tell the inspectors?"

This rigidity in the general education system is the single most significant barrier in providing education to all children. The second barrier is the total lack of community and family involvement. The community almost always referred to "village schools" as "government schools"!! It was not "our village school."

The team then started working on reforms in education at various levels: at the classroom level, at the school level, and at community levels. Joyful Inclusion was developed to enable this process.

One such reform envisaged was to involve the communities in school activities so that they no longer were perceived as government schools.

The team also reviewed the various experiments that have been used to bring in classroom reforms. One approach that was particularly impressive was the Nali Kali approach implemented by the District Primary Education Project (DPEP) and UNICEF in HD Kote, Mysore district in Karnataka. This approach is an inclusive approach which works on the understanding that:

- Children learn at different paces.
- Learning should be child-centered.
- Schools are multi-grade schools and strategies should take this into account.

The CBR Network then looked at what was missing in Nali Kali that they could bridge. They saw that the curriculum ladder did not take into account children with disabilities. The rungs were too wide. The methodology did not take into account the fact that there are children who cannot see, hear, move and have difficulty in learning. It also did not take into account all the directives of the National Council for Educational Research and Training (NCERT) curriculum.

On the strength of the observations gained, the Joyful Inclusion team of the CBR Network developed Curriculum Based Criterion Referenced Data (CRD) based on the NCERT curriculum for wider use of the materials in small group teaching centered on learning levels. They included Montessori and Portage strategies to make it multisensory with scientific precision, and used the strategies suggested in the UNESCO Resource Pack to develop the Joyful Inclusion material.

Two strategies were also adopted to combat some of the weaknesses of the IEDC—Akshara resource center for ALL children; and criterion and illustration based evaluation system.

Joyful Inclusion: A Classroom for All

Joyful Inclusion is a pioneering model in which general teachers play a vital role in inclusive education. It was started in 1998 with the goal of scaling up of primary education to all children with special needs in all schools of selected rural areas.

> Joyful Inclusion is based on the rationale that any child may experience a special need during the course of education.
>
> Developed on the basis of the UNESCO statement in the manual for teachers to develop a classroom for all.

The objectives of Joyful Inclusion are:

1. To prepare general teachers in child focused learning, facilitating learning in least restrictive environments.
2. To develop a single material that is curriculum-based criterion referenced and may be used for identification, assessment, planning, implementation, and evaluation of primary education.
3. To develop learning materials that could be used by children with and without special needs.
4. To prepare a monitoring tool in which even illiterate parents could participate.

5. To develop PLUS curriculum CRD, Facilitator cards, child self-learning cards, low-cost and appropriate learning materials to facilitate a process of demystification and enable general teachers to learn skills at their own pace based on the immediate needs in the classroom.

Development of the Curriculum-based Criterion Referenced Data (CCRD)

The curriculum at present does not take into account the needs of children with disabilities. It is clearly recommended that inclusion in order to succeed should have a curriculum that is suitable for all children and this then should be:

1. **Child centered:** Children with disabilities need child-centered curriculum, which takes into account the individual needs of children. The curriculum needs to set specific, observable, measurable, and achievable learning outcomes (SOMA).
2. **Flexible:** A flexible, locally relevant curriculum, teaching and learning strategies are intrinsically important for children with special needs to participate in the educational process.
3. **Participatory:** Children with special needs require a learning environment in which they can actively participate in learning in small group-learning settings.
4. **Partnership with parents:** Partnership with parents is a key factor as children learn not only in the classrooms but also at home.

Experts in the field of education were called in for a five-day discussion as to how to develop the CCRD. The broad outline, as detailed above, was followed and the CCRD was developed.

Training of Teachers in General Rural Schools

The project area for the feasibility study was chosen—three *gram panchayats* of Bangalore rural district—Kumbalahalli in Hoskote taluk, Aralumallige in Doddaballapura taluk, and Hemmigepura in Bangalore South taluk.

Stage 1: Preparation of Facilitator and Child Cards

Thirty teachers including those from special schools, resource teachers, DIET staff and general teachers attended a 10-day workshop. The primary aim of the workshop was to evolve Facilitator cards. The academic subjects were Kannada (language), Mathematics and Environmental Studies. Each facilitator card was based on the activities/curricular objectives as prescribed in the CCRD.

What is a Facilitator Card

A facilitator card is prepared for each learning outcome and gives the following information to the teacher for each concept:

1. What is the concept, sub-concept, and specific learning outcome.
2. What are various task analyzed steps.

3. Where will the child learn—indoors or outdoors (location).
4. How will the child learn—methodology.
5. What is required to assist the child—material.
6. How to evaluate what the child has learnt or achieved—(Criterion for success and evaluation).
7. What modifications are required to assist a child (who may have hearing, visual impairment or learning, moving difficulties).
8. A logo for each concept.

What is a Child Card

A Child card is prepared for each task-analyzed step mentioned in the Facilitator card. All Child cards are written in the first person and with self-learning materials (either print or 3-D materials).

A Child card has the following features:

1. What is the concept, sub-concept, and learning outcome.
2. Activity
3. Logo (for each concept to help the child to pick up the card and put it back after the activity).

Gender and Life Skills

The Facilitator cards and Child cards are gender sensitive. Life skills as recommended by World Health Organization has been taken into account while designing facilitator cards and child cards.

Achievable Learning Outcomes

Every child learns at her/his own pace in Joyful Inclusion

Learning outcomes are sequenced and are achievable by a child within a specific period of time. No learning outcome should take more than five days for a child to accomplish—if the child has difficulty in learning the outcome then the teacher has to check the baseline established for each child and individual child plans. If these two aspects are correct then the teacher checks the methodology, learning materials, and evaluation methods and re-evaluates her goals. Following the successful development of Facilitator cards, 30 teachers from 28 government and two NGO run primary schools were trained in the use of CCRD over a period of five days. The teachers had to develop the child self-learning cards. The Child cards explained the activity that would enable the child to learn a particular concept by himself/herself. At the training program the teachers:

1. Were able to express the impact of disability on learning.
2. Learnt the skills required using CCRD for establishing baselines on current levels of learning, planning annual, half-yearly, quarterly, monthly, weekly, and daily learning schedules.
3. Learnt the skills for small group formation, facilitation, and classroom management.

4. Were able to use Facilitator cards.
5. Were able to prepare child self-learning cards and learning materials that were disability friendly.
6. Were able to identify all the areas required to establish *akshara* resource centers at the *panchayat* level.
7. Were able to identify the strategies required for formation of inclusive education committees at the *panchayat* level.

Joyful inclusion pack and kit

After the five-day training the teachers were equipped with a kit containing materials that they would need to implement Joyful Inclusion. Each kit contained Facilitator and Child cards, the CCRD, cutouts of letters, and other learning materials. The follow-up included one-day training in teaching arithmetic using Montessori methodology.

Plus curriculum pack

At first the CCRD, Facilitator and Child cards were developed based on the general curriculum as prescribed by the NCERT. However, it was not enough for inclusive education, since children with special needs have additional needs. So in order to meet the plus curricular needs a plus curriculum pack was developed. The Joyful Inclusion Plus curricula pack consists of: curriculum-based criterion referenced schedules for each area such as Braille, orientation and mobility, sign language, lip reading, behavior modification skills, mobility, physiotherapy, etc. There are 45 areas and 250 cards are prepared to meet the needs of children from the age group 3–9 years. The plus curriculum pack can be used even by *Anganwadi* workers along with Portage-Montessori based preschool pack developed by CBR Network. This model was also successfully tested in Manvi, Raichur district in Karnataka state with support from the Government of Karnataka.

Inclusive learning materials

These materials are low-cost and take into account the needs of all children in the classroom. What is inclusive learning material? In simple words, it means a learning material which can be used by all children. For example, the sandpaper letters are fixed on cardboard which also has finger spelling in one corner and Braille symbols on the other corner. The size and colors are chosen keeping children with low vision, mental retardation, and specific learning difficulties in mind.

What Does the Inclusive Classroom Look Like

Inviting for the child

Since children should feel enthusiastic about coming to school, the classroom needs to be colorful and interesting, a place to investigate, and to learn. For easy access, ramps (for children with physical

disability) and a hand-rail (for children with visual impairment) are required. A mug and bucket of water may be kept outside the classroom to ensure that children maintain basic hygiene by washing their hands after playing outside.

Look beautiful

The classroom may be decorated with potted plants, which may help in learning the numbers (counting leaves), agriculture, and nature. Part of a wall (from 2.5 feet upwards) could be painted black to serve as a blackboard. Each child could use this to learn various concepts, drawing, etc.

Encouraging of communication and self-image

At the entrance of the classroom, and at the height of the child, a full-length mirror may be placed (if a full-length mirror is not within the budget, three small mirrors may be put together). The mirror may also be used to teach children with speech and hearing impairment.

Assessment

A functional assessment tool is prepared for children in the age group of 0–14 for screening and functional ability assessment. This is based on tool developed by NCERT in PIED and WHO-CBR Manual project. This tool is available in English, Kannada, Telugu, Urdu, Nepali, Tamil, Hindi, Malayalam, and Bhojpuri. Individual child records (one record is sufficient for four years of schooling) are maintained to record the progress of every child. It is essential that the facilitator take some time to record the baseline of every child with help of the parents. The CCRD is used to measure the baseline of the child. Based on the findings, a yearly, half-yearly, quarterly, monthly, weekly or daily plan may be developed for each child. This has to be updated everyday to ensure that the children are really learning the concepts that they need to know.

Seven Teacher-friendly Steps in Joyful Inclusion

1. The teacher establishes a baseline of the existing levels of each child's competencies using the CCRD.
2. Based on the levels of the child's competency, teacher plans long and short-term educational plans.
3. Based on the education plan children are formed into small groups.
4. Using facilitator cards the facilitator prepares group educational programs with graded support from the teacher.
5. Children use child cards and materials.
6. Teacher evaluates individual child learning and records concepts learnt without help.
7. Teacher records the progress in a child log for the use of the school.

Akshara Sampanmoola Kendra

Akshara Sampanmoola Kendra is located in a village *panchayat*, which has the following facilities. (A village *panchayat* may have more than one akshara resource center.)

1. A card library on village stories, rangoli, craft work, folk songs, local sports, the local village theatre, crops, needs, etc. These cards are written by children in grades 4 and above and educated youth also participate in the preparation of these cards by conducting interviews with the elderly, the carpenter, blacksmith, potter, etc., in the villages.
2. All resource materials needed for children with special needs—wheelchair, sensory training materials, sign language kits, walkers, early stimulation materials for children with special needs, parallel bars, prone boards, corner seats, etc., in various models made from low-cost locally available materials.
3. A tape recorder and cassette for children with special needs such as talking books and music cassettes, speech training cassettes.
4. A directory of *gram panchayat* listing those who are skilled and educated in the community, donors list, achievements of village people in all the fields, etc.

The raw materials for akshara resource center are CCRDs, jute sack, materials prepared using waste paper technology. The place for akshara resource center is given by the village *panchayat*.

How akshara resource center works:

1. Children use it as library for additional reading materials.
2. Teachers use it to enhance their own learning.
3. Teachers borrow learning materials from it.
4. Community uses it as a cultural center for documentation of the village resources.

Monitoring of the Project

In the project areas, three field staff have been nominated, one for each *gram panchayat*. They have been entrusted with the responsibility of ensuring that there is no obstacle in the implementation of Joyful Inclusion in the schools in their region. Two members of the office staff have also been deputed to help each of the field staff. The process of implementing Joyful Inclusion must necessarily begin with the identification and assessment of the children with disability. Then the enrolment into the general schools must take place. The community has to be prepared to support Joyful Inclusion, and they must feel the need to educate the children with disabilities. The *gram panchayat* members were approached and they were advised about the needs of children with disabilities. The parents are now in the process of forming self-help groups to enable them to help each other in times of need. Once the self-help groups are formed the children with severe to profound disability may be trained in tasks of daily living skills in the self-help group itself. The self-help group will also function as an advocacy forum to help raise awareness in the community and to ensure that schemes for the persons with disability are implemented without delay. The self-help group will also ensure that the drop-out rate is reduced.

Teachers Speak

We have adopted Inclusive Education approach in our school from the year 2000–2001 for 1st and 2nd grades. Sri R. Govinda Raju teaches grade 1 and Smt R. Lakshmamma is teaching the grade 2 students. When we first introduced Inclusive Education, we felt that it was impossible to teach using this method. After practicing for some time we feel that it is most useful for both teachers and children in the teaching and learning process.

The technique of Inclusive Education has been imparted to us by CBR Network.

After a child is admitted to the school we evaluate the current learning levels by establishing the baseline of the child, i.e., the learning level of the child at the time of joining our school. The baseline reveals the level from which we should start teaching the child. Then we make plans for quarterly, monthly, weekly educational programs. After taking the baseline assessment of each child, we form a group of about five children who are learning the same concept. All our learning materials are multisensory so it is easy even for those children who cannot hear or see. We notice this method has increased the learning of all children.

The Inclusive Education program approach is most beneficial to our school which is multigraded. We have two teachers teaching grades 1, 2, 3, and 4. The group teaching facilitates self-learning. If the learning is not satisfactory in a particular group, the teacher works at giving more attention to that group—in the past the teacher would only be supervising the children. We provide graded support to these groups. Partial support or full is also given depending on the need of the group either by us or peers.

Though we were working as teachers for the last nine years we had no idea what the term "curriculum" meant. Though we had always wanted to make the curriculum relevant to our children in the village we had no idea how to do it. The Curriculum Criterion Reference Data (CCRD) in the Inclusive Education approach has been very useful for our teachers.

We choose only those activities to teach concepts that are experienced by our children in the village. This makes it easy for both the teacher and the children to understand how what is being learnt is relevant for them. Earlier we were focusing too much on textbooks and lesson plans. Now we focus on children.

For each "Learning outcome" there are 5–10 Child cards. These cards are kept in the classroom, providing easy accessibility to the children. They are free to take the cards and they learn on their own in groups. We have made display bags with the support of the mothers. They help beautify our classrooms with *rangoli* patterns drawn on gunny display bags.

If the child has already learnt a particular activity he/she moves to the other group to teach that group. The teacher gets some free time to plan other activities and advanced lessons. That was not possible earlier as the supervision of the children through the day would make them very tired and irritable. Now we see children managing themselves!

In this approach, children learn at their own pace. For example, if the child has learnt 40 percent of the learning outcome before coming to school, teaching of the remaining 60 percent learning depends upon his/her own pace of learning. If the child has the ability to learn fast, he/she can achieve this target by December, i.e., three months before the new class is to start. For the remaining academic

(Contd. on next page)

year he/she can learn the next grade-level work. As there is continuous evaluation, we can measure how much he/she has learnt by standards that are specific, achievable, and observable.

Parents specifically understand what the child learnt and they can measure and observe the constant change. In our school a student, Somashekar studying in grade 2 has hearing impairment. Earlier he was studying in a normal school (with a visiting resource teacher) at Doddaballapur. When he came to our school, he did not know how to write alphabets. Now, learning has been made easier for him with a hearing-aid and now he has learnt to write alphabets and is able to complete whatever is assigned to him. He also participates in cultural activities in the school.

We are now planning to implement Inclusive Education approach in grades 3 and 4. Teachers teaching these grades are already undergoing training. Thus, we are equipping ourselves to implement the program.

We have started Akshara Sampanmoola Kendra since February 2003. This resource room is very useful to children. Teacher Lakshmamma has been trained in computers and is giving computer training to children.

The children visit Akshara Sampanmoola Kendra and learn folk songs, and *shishu geethe* (nursery rhymes). They get information on historical places and listen to the biographies of different people. They are free to pick up the books and materials they wish to read. The older children prepare the cards and materials for the use of the younger children. We have allotted one period for each grade in our timetable for this purpose.

Source: As told to Indumathi Rao.

A Mother's Story

My son Somashekar has a hearing problem and was studying in the Doddaballapura school. The classteacher did not pay him the attention he needed and left all the education to the "resource teacher" who came once a week for speech therapy sessions. I was not able to understand what was being done with him for I do not know how she taught him. All I know is that at the end of three years my son was not able to read and write anything.

I shifted my son to Alahalli Primary school. Now he has improved a lot, and is able to read and write. He also enjoys mixing with all the children and plays very well with them. In this school the teachers teach him with great interest. They include him in all the activities. The children in the school are very cooperative and say that they enjoy playing with him too.

The first action the new school took was to fit Somashekar with a hearing aid, which saw him try to speak a few words. Now he tries to understand others when they speak.

We are laborers, we do not know how to read and write. We cannot afford extra tuitions and we do not want to send him to a special school. I am happy that he is getting good education in our own village with the other children from the other huts.

Source: As told to Indumathi Rao.

Unit III

The Way Forward

14

THE ROLE OF SPECIAL SCHOOLS

Madhumita Puri and George Abraham

A number of mainstream schools across the country have begun opening up their doors to disabled children. The DPEP and the *Sarva Siksha Abhiyan* of the Indian Government seems to be gathering momentum in several states. The NCERT, the Office of the Chief Commissioner for Persons with Disability, several NGOs like the International Council for the Education of the Visually Impaired (ICEVI) have been actively promoting inclusive education across the length and breadth of the country with reasonable impact.

With more and more disabled children finding their way into mainstream schools, people have begun to wonder if special schools would soon become an entity of the past. With inclusive education becoming the order of the day, will special schools have a role to play? With mainstream teachers taking over the role of teaching the children with disabilities, will the special education teachers be out of jobs? The situation is very much like what happened when the government first talked of computerization in the Indian railways and banks, people had wondered whether the computers would displace the current employees and systems. Nothing of the kind happened, computers have only made the railways and the banking services more efficient and there was no unemployment created.

Special schools have played a very significant role in the past hundred years. Credit must be given to them for having introduced the concept of education and rehabilitation of the disabled. Parents did not know as to what they could do with their children. They could not appreciate their potential or ability. They tended to be overwhelmed by the disability. Only the gloom and despair were seen. They could see the long dark tunnel but did not possess the ability to see the light at the end of it. Disabled children tended to be either overprotected or totally neglected and very often abandoned. It was the inception of special schools that helped people gradually recognize the fact that disabled children could be educated and trained to be useful.

It has been the special schools that have helped the disabled break out into the world and embark on the path of self-realization and self-expression. Special schools have over the years opened avenues for the disabled to emerge from the dark corners and crevices of the world where they

were tucked away for centuries by their families and society. Now it is hoped that the inclusive schools will trigger off the process that will help the disabled merge into mainstream life and empower them to be an integral part of it.

Special schools continue to have a definite role and responsibility in the inclusive scheme of things too. Their role that was primarily pedagogic till now would need to be redefined. Special schools will need to take a fresh look at their strategy, and reposition themselves as a resource and a facilitator to the mainstream education system.

Inclusive education must be viewed as a logical step forward in the evolution of education of persons with disability. It must not be viewed as a threat to special education; on the other hand it is a definite indicator of success. Special schools and special educators should seek to build on this positive development, rather than feel insecure. Special schools and special educators with their expertise and experience could strengthen the inclusion efforts by helping the mainstream schools in addressing the special needs and challenges posed by the presence of disabled children. This could very well lead to a win-win situation.

Organizations like the National Association of the Blind, Spastic Society of Northern India (now called AADI), Vidya Sagar and a few others have reorganized their set-ups. They have realigned themselves with mainstream schools, helping them with inputs like training of teachers, provision of learning material, support in the classroom, curriculum adaptation, development of teaching aids, evaluation process, etc. This emerging partnership promises a great deal and appears to be heading in the right direction.

Identification and Assessment

In 1998, when the Kanishka World Cup cricket for the blind took place at New Delhi, several people living in the rural interiors of the Indian subcontinent saw the promotion of the event on TV. They wondered, if the blind could play cricket, then they definitely must be going to schools. Several people had traveled with their blind children to cities checking out on education opportunities.

Even in today's modern world, there is a large number of disabled children who are hidden in distant villages, slums, and resettlement colonies of huge metropolitan cities far from the reaches of education and rehabilitation programs for reasons of ignorance, poverty, religious and superstitious beliefs, lack of education, and social indifferences. There is a great need to look for these hidden children. They need to be found. They have to be integrated into the mainstream. They cannot be allowed to degenerate and decay and lead sub-human lives.

Special schools must endeavor to conduct door-to-door surveys. Identify children with disability. Counsel the parents and the members of the community about the potential of the persons with disability and inform them of the education and rehabilitation opportunities that exist. Help the family and the community look at their disabled children as potential resources rather than life-long liabilities.

Links must be created with hospitals and paramedical services. Regular clinics and camps must be organized in the community to screen and assess the children with disabilities. Children whose

conditions can be treated should be handed over to the medical services and the rest would be identified for education and rehabilitation programs. Special schools must strive to reach out to the children with disability rather than wait for children to come to them. Their object should be to get every child with disability into the mainstream education system.

Preschool Interventions

Children with disabilities are more often than not neglected. Parental attention is virtually non-existent. The child misses out on a normal childhood. Poverty and ignorance deny the child of proper nutrition, timely milestones, stimulus for physical and intellectual development, mobility, social skills, etc. Special schools have a vital role in helping the disabled child and families cope with early childhood challenges.

The parents have to start recognizing the fact that their disabled child is like others with abilities, talents, and potential. They need to be given the opportunity to grow and evolve. Parents also need to be encouraged to empower their disabled child as they would their other children to be self reliant. They need to be propeled to take action in the present day to ensure that their child would need skills to be able to take care of themselves, when the parents are no more. The child's education and rehabilitation is paramount. Parents need direction and encouragement through individual and group counseling.

Further, the child needs to be groomed, nurtured, and prepared well as he/she enters a mainstream school at the age of 5 or 6. The child should be able to independently handle the toilet, personal hygiene, clothes, hair, etc. General awareness, language and communication skills should be on par with children of their age. Even aspects like posture, movements, mannerisms, facial expressions, and interaction with other children need to be addressed and opportunities of learning the acceptable mores, need to be specially provided. Special schools have a tremendous responsibility to ensure that the disabled child is presentable and well-equipped to cope comfortably with school and looks forward to it as an enjoyable experience. Wherever possible, the parents should be involved in this process.

In addition, the special schools also need to function like other regular nursery schools where the child learns rhymes, songs, games, numbers, alphabets, etc. It is in the nursery where the child begins to make friends, learns to share, and begins to do things together with other children.

The role of special schools at the preschool stage is critical, since the parents often are not equipped to handle the child's emotional, intellectual, and physical needs. Specialized advice and help are also few and far between. Besides parents would be struggling to cope with their own disappointments, emotions, and frustrations.

Placement

The special schools would also have the added responsibility of placing the disabled children in schools. They need to be able to identify the right school for the child, do all the paperwork, help the parents with the documentation such as the disability certificate, birth certificate, i.e., the formalities required for admission. More often than not, the school would need to be persuaded to

provide admission to the child. Special schools would need to do the convincing and advocacy, and provide support in the time of disappointments.

Resource Center

While looking for admissions for their preschool children, special schools must be available at all times as a "Resource Center" to assist mainstream schools handle the challenges posed by the presence of this diverse population of children.

Special schools should conduct orientation workshops and short-term courses for the teachers of the mainstream schools to equip them with the requisite knowledge, skills and sensitivity to deal with and effectively help and guide the disabled children through various routines and activities in the school. For example, guiding the teacher to read aloud while writing on the board so that the blind child can follow and take notes in Braille, or to face the deaf child and speak slowly or use sign language. Thus, schoolteachers would begin to look upon the special educators as a day-to-day resource for the management of day-to-day issues and problems.

The special educator would be a "watchman" to the disabled student. They would closely follow what is being taught in class and ensure that the notes are complete, that homework is understood, and completed as per the schedule, clear doubts, and ensure that the child is well prepared for the next day at school. Thus, the special educators become a vital and integral part of the teaching process, ensuring by their very presence that the student does not take too much time and that the teacher does not feel stress or pressurized. This necessarily would happen with regular interactions with the classteachers and monitoring of child progress.

Special schools have to also constantly monitor the availability of appropriate learning material. For example, the blind child must have material in Braille, audio cassettes or CDs. Readers must be arranged to read to the blind on a daily basis. Sign language interpreters must be at hand to help the deaf child access class lectures and in note taking.

Further, the special schools must also work on developing effective teaching and learning aids that the teachers can use to teach the disabled child. There is need to develop an R&D effort in special schools to constantly look at technologies, low-cost and effective tools and equipment that would help make life for the disabled child easier in the school.

Education and Rehabilitation of the Severely Disabled

Children with grave disabilities like severe mental retardation or multiple disabilities, who at the present time cannot be included into the mainstream education process, or those who would benefit more from intense, highly specialized supervision, and teaching techniques could be helped by special schools in separate settings either within the school premises or outside. For example, communicating with the deaf-blind child is extremely complicated and the medium is still not very well-defined.

Future Directions

Including children with severe disabilities into the mainstream education system would not be feasible at the present time. Special schools need to take on this special assignment and develop a comprehensive methodology based on a practical approach. Such methodology could then be subjected to intense field testing in selected model schools for dissemination and implementation in the general mainstream. This would make for a future where teaching techniques, technologies, and teaching aids and skills are so evolved that including these children too would be within the realms of possibility.

That would be the future milestone in the history of special education!

15

AMENDMENTS IN LAW AND POLICY

Madhumita Puri and George Abraham

If the *Sarva Shiksha Abhiyan* is to become a reality and if all schools are to become ready to open their portals to include children with disabilities into their fold, certain key modifications in the Persons with Disability Act (1995) will have to be made. The commentary below seeks to suggest modifications and amendments to those sections that deal primarily with education, a section that we believe is the foundation for the implementation of all other sections.

In the overall perspective, it is the premise of the entire law that needs amendment—to reflect the will to *intentionally include*. Thus, every clause should have a leaning towards inclusion, even through the grammatical structure of its sentences.

Along the same lines, the responsibility of all aspects of common areas like—education, skill development, and employment should be under the common public heads—like education of the disabled should come under the Department of Education, Ministry of Human Resource Development. This is currently not the scenario, dichotomized as it is by the placement of this department in the Ministry of Social Justice and Empowerment. This will ensure that the foundation for inclusion begins with equity. When services for all section of the population are monitored by the same agency, and when the ideology is of a common school, then it necessarily follows that all supportive efforts will be in that direction.

Teacher training should encompass both regular and special education. Specialized training could be imparted only for those with severe impairments or multiple disabilities, who may not be effectively included now. Again the intent here would be to include eventually and the law should be so phrased. The existing standards for entry into the regular teacher training courses and the special education training courses should be comparable to ensure that the quality of education of children with disabilities is not compromised at any stage.

Development of learning material or adaptation of existing learning materials such as textbooks etc., should be the primary responsibility of the apex body NCERT, which governs the policy of content and curriculum of schools. New material could be under their guidance. Efforts should be supplemented by other agencies who work directly with children with disabilities, to ensure that

the materials so produced are relevant and up-to-date. In fact, it is recommended that a body comprising the NCERT, research organizations, the national institutes and NGOs be set up, whose prime responsibility would be to develop effective and practical teaching aids and update teaching techniques.

The content of curriculum should be common to all. It is strongly recommended that there is no watering down of the curriculum based of premises of inability. There is no scientific basis for this premise. All research indicates that this premise was based on the inaccessibility of educators to appropriate teaching techniques.

Regarding flexibility in the examination system, the focus needs to be more on accessing the candidate's extent of knowledge. Thus, the assistance provided for children with difficulties would be augmenting this intent.

From the above perspective, inclusive education, therefore, becomes the responsibility of each stakeholder in education—policymakers, administrators, educators, parents, community members and children. It requires a concerted and unified approach by government and non-governmental agencies to bring about educational change not through confrontation but through dialogue, persuasion, example, and action. The dilemmas that confront us must be addressed. We must recognize that the needs of children and adults with severe and profound multiple impairments may not be adequately met in the regular classroom and therefore centers of specialization will need continuing support. We must be prepared to be frank and honest in our definition of inclusion and be prepared to concede that sitting in the same room does not ensure active participation. Further we have to address the fact that although social participation is very important it is nevertheless, only one component of our educational goals and a "special needs resource center" geographically located within a regular school may, in fact, be completely segregated and isolated. The challenges of building a curriculum that includes the student with severe learning difficulties in the same classroom as her age-related peer group is considerable and the feasibility of these ideas need to be carefully examined.

Perhaps the most sensible way to proceed is to make a firm commitment to start the process of inclusion by doing what each of us feels is necessary and possible within our community, in collaboration with local schools and the representatives of the government. If the necessary first step is to include the education of disabled children within the purview of general education under the MHRD, then we all must combine our efforts to work for this change in the structure of governance. Alongside, we must all work as earnestly as possible to get as many children with disabilities in regular classrooms. Finally, there needs to be the conviction that by teaching children to be tolerant of differences and to give of themselves, we are ultimately investing towards the continuance of the human race.

The basic guideline in making any innovation, any change, is a commitment to make it work—the rest follows, perhaps not in the way we want it to, perhaps not in a smooth and uninterrupted manner but in ways that ultimately result in positive gains. This applies to inclusive education in equal measure as it does to other challenges faced in life.

16

THE REAL SCHOOL

Madhumita Puri and George Abraham

The "Real School" is a school where LEARNING is for ALL. Much has been said about this in the chapters and pages of Units I and II, and none of that needs to be repeated again. However, for the purposes of quick reference a list of issues that school administrators and policymakers need to keep in mind in order to reach the target of inclusion are mentioned here.

It needs to be reiterated that the shift from special to the regular school is not envisaged to be achieved over a single year, but rather should be viewed as a process whose movement is continually upward (see Figure 16.1).

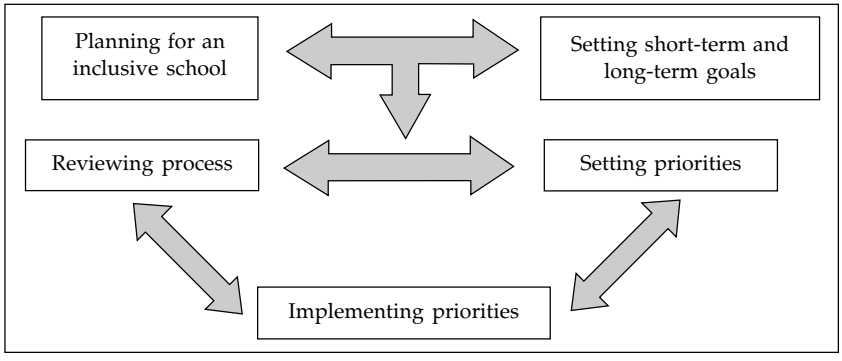

Figure 16.1

Issues for Policymakers

1. Development of a mandatory system in which all the clauses of the PWD Act (at least in terms of education) are abided by the various boards of examination. It is essential that the

need to "reinvent the wheel" again and again in all the states of the country and for all the various exam boards is not felt at all.

2. Development of a system that seeks the gradual transfer of resources, expertise, staff, and students from segregated schools to an appropriately supported and diverse mainstream.

Issues for School Administrators

At the very outset, the focus will have to be on the development of a stringent foundation at the preschool level using the existing resources of the community and special schools. In this process the preschool and play school education needs to be accepted as an essential component of the educational journey. Thus, the link between play schools and the nursery/elementary school would ensure in the first instance its accountability and hence continuity to this system of change.

- **Admissions:** Lay down the criteria for admission of the disabled into the mainstream classes in clear terms, and advertise and encourage this entry where possible.
- **Orientation:** Introduce children to the school, its rules and regulations, and conduct of activities.
- **Resource room:** Resource room in the school, which is well-staffed by special educators and auxiliary therapists to ensure that students who need support services can do so within the confines of the school and within the school timings, in order to develop a service that is equipped to be successful.
- **Support teachers:** The support teacher forms a vital link in the triad of teacher–student–learning.
- **Co and extra-curricular activities:** Clear policies and inclusionary practices to be laid down that point towards the inclusion of every child in activities other than academics.
- **Participation in competitions:** The projection of the child with disabilities in the forefront of student centered programs serves as a powerful role model for other students with or without disabilities.
- **Homework and assignments/assessments and examinations:** An understanding that clearly underlines the need to follow a uniform set of guidelines on the issue of home assignments for all students in the classroom. At the same time there is also a need to acknowledge and thereafter evolve modifications that would make this possible. Parents participation and parent teacher meetings need to be conducted with a view to sharing experiences, and concerns and finding solutions.

In the Long-term Perspective

- **Teacher training:** Where the accent is on information and knowledge regarding pedagogy and learning styles. All teachers should be on par with each other at least in term of training.

There need be no compromise of the educational level of the support teacher. Further, we should make continuing teacher training programs a mandatory qualification for all teachers.

- **Augment library and other facilities:** In a manner where access to information is as per the need and desire of the learner.
- **Collaborative effort:** Encourage the development of constructive thinking skills but encouraging students to read basic course-material on their own and use the class time to discuss and debate. This will encourage the development of skills that are used in adult life.

None of the above is to be viewed in isolation and no task is to be considered the responsibility of one agency alone. If we are to nurture the future world with care and commitment, we would require to have a holistic view of the needs and gaps in present practices. Lists of recommendations, of dos and dont's for the development of an unified and cohesive world, should merely serve as the basic foundation for a journey that makes this possible—for us and our children.

It is only fair!

Appendices

A) Frequently Asked Questions

1. *Many parents do not believe that the needs of their children can be met in general education classrooms. Currently, parents have some choice in whether their child attends a general education classroom, resource room, special class, or special school. Will inclusion eliminate parental choice?*

Conflict often exists between what parents believe is the best educational setting or approach for their child and what a school offers. This conflict is acted out in various arenas other than special education. Parents who want "traditional," teacher-directed, strict, basic instruction, are dissatisfied with an "innovative," student-centered approach. Some parents object to outcome-based education. Still others object to cooperative group learning.

In the past, many parents of children with disabilities did not have a choice about supports to be delivered within the local classroom because the supports were only available in separate places such as resource rooms and special classes and schools. In essence, they had less choice than today. Inclusive policies and practices are not intended to eliminate parental and child choice. Inclusive educational policies and practices simply make it possible for any child's educational placement of first choice to the local school if they should so want it.

Parents' underlying concern is for their child's success. The belief of some parents that their child will not be successful in general education classrooms is grounded in a history of supports and services *not* being brought into the classroom to ensure success. When special and other support services are moulded with general education to deliver exemplary instructional and assessment practices that enable a diverse student population to succeed (e.g., cooperative learning, student-directed, performance-based assessment), families would see less need for separate programs and alternative choices to general education.

2. *Are there some children for whom placement in a general education classroom will not be appropriate?*

The question of student placement—what type of learning environment is most likely to result in meaningful learning—and parental choice are closely linked. It is true that for some students with disabilities the "regular" classroom may not be the optimal learning environment. This is also true for some students *not* identified as disabled. Specifically, in 12 or more years of public schooling, it is unlikely that every teacher whom a student encounters will have all of the characteristics (e.g., content mastery, instructional skills, flexibility, warmth, compassion) parents want for their children. The dream is for a "perfect match" every year; the reality is that most of the time the match is satisfactory. The nightmare is a very poor match.

A first step to take, then, when planning for individual student differences is to identify the unique characteristics, skills, strategies, and knowledge each particular student brings to different learning tasks and to identify likely educational mismatches. Based on a student's characteristics and the demands of a task, a constellation of services, supports, resources, and accommodations can be developed and *brought to* the child to remediate the mismatch and help secure achievement of desired outcomes.

As we get better and better at developing educational experiences that support and include all children, the concept of "continuum" will become less and less relevant. In other words, "placement" decisions and determinations about what constitutes an "appropriate environment" will become moot points as schools embrace an inclusive educational philosophy and teach children together rather than apart from one another. But till then, inclusion would have to be carried out in a phased manner.

3. *Many people within the deaf community do not believe that the educational needs of children who are hard of hearing or deaf can best be met in general education classrooms.*

Issues concerning the educational placement of students who are deaf or hard of hearing differ significantly from those pertaining to students with physical, mental, learning, and emotional challenges. The fact that vocal language is relatively inaccessible to these students means that we must address different issues when considering their education and meaningful inclusion into the community.

Like all students, children who are deaf use language to build mental constructs, which, in turn, serve as foundations for future learning. Unlike children who can hear, however, children who are deaf learn language visually—in other words, sight comes before sound. As a result, sign language is, by far, the most accessible language to children who have been deaf from birth. Their learning can be seriously jeopardized if the acquisition and mastery of sign language is delayed by oral training. Understandably, the deaf community has been tenacious in stressing that students who are deaf must attend schools where sign language is the primary language of instruction. Saying that failure to do this can compromise students' comprehension and appreciation of the curriculum. These advocates also state that students who are deaf might be prevented from experiencing the complexity and richness of sign language during instruction and social interactions.

Nevertheless, serious problems exist with the current education system for children who are deaf or hard of hearing. Most of the programs are located in only a few places throughout the country. Therefore, children must often live apart from their families to attend these schools. Advocates for inclusion assert that an educational system that forces people to choose between family life and school is seriously problematic. In addition, segregated schooling typically leads to a lifestyle that remains segregated from the community at large.

We will only be able to find options that meet all the needs of students who are deaf or hard of hearing when we take into account the perceptions and interests of the deaf community. Hearing professionals have long imposed their educational priorities and goals on students who are deaf. The deaf community has resented these intrusions and remains justifiably skeptical of hearing educators. In no other area of education are we perhaps at greater risk of providing simple solutions to complex problems and forgetting Menke's observation that every complex problem has a simple solution that is invariably wrong.

4. *Inclusion advocates appear to be opposed to any type of homogeneous ability grouping. How are the needs of children identified as gifted and talented going to be met in general education classrooms? These children shouldn't be held back in their learning or be expected to teach other children. They are the leaders of tomorrow.*

Inclusion advocates are not categorically against homogeneous grouping. They do, however, understand that no two learners are the same and that grouping of any kind should be short-term and for specific, focused instruction. Educators are increasingly aware that intelligence is not a unitary ability; nor is it fixed in time. Emerging conceptualizations of intelligence encompass the idea that people possess "multiple intelligences." Articulated and popularized by Howard Gardner (1983, 1993), the multiple intelligence theory suggests at least seven types of intelligences exist and asserts that learning environments must be structured to nurture students' differing intelligences. The label "gifted and talented," then, takes on new meaning and

is best thought of broadly (i.e., students who excel in auto-mechanics, computer science, arts, or interpersonal intelligences all are "gifted") rather than narrowly (i.e., only students who score highly on linguistic tests of intelligence are gifted).

Inclusive schooling does not mean that children with gifts and talents will not receive focused attention in one-on-one or homogeneous group arrangements. On the contrary, both will be options, as needed, for any student. Capitalizing on the multiple intelligences notion of human difference and potential, homogeneous groups could be arranged along any number of dimensions of interest or "intelligence" (e.g., musical preferences, recreational interests). Homogeneous "ability" grouping should occur only when grouping measurably reduces student differences for the targeted skill or concept; when teachers closely monitor student progress and change groupings as students progress; and when teachers actually vary their instruction from one group to the next.

Removing so-called gifted children from regular classrooms is one more way in which we seem to be "aiming for the middle" (wherever that is) in education. Rather than fostering excellence, the siphoning off of "top" learners contributes directly to a process of making "general" education mediocre. *Perhaps* we can develop "the best" computer programers and "the best" scientists through a gifted and talented ability-grouping approach. However, some argue that what the world needs most at present are more peacemakers and better collaborators. In fact, employers are saying repeatedly that the workers they seek are those able to interact and work well with an increasingly diverse work force.

5. *Are advocates of inclusion primarily concerned with socialization? Are academics being sacrificed?*

Academics, socialization, social/emotional development, life skills, employability skill development, and recreation are just a few of the areas of concern when planning an educational program. None of these areas, including academics, should be ignored as a potential priority area for a child. Academic, social, emotional, and moral development are inextricably intertwined goals of education.

6. *How do we grade students with disabilities? Is it fair to give them an A or a B for doing work that is significantly different from the rest of the class or after we have provided them with accommodations and modifications to the curriculum and instruction.*

The "correct" approach to student assessment is a hotly debated issue. Some advocate the continuation of competitive, normative comparison practices (i.e., *A, B, C, D*, and *F*; percentile scores). Others advocate the adoption of outcomes-based assessment and instructional strategies. Performance-based and other authentic assessment approaches are more compatible and supportive of children with and without disabilities than traditional standardized achievement testing. They give those who wish to know about student performance a much richer picture of what students actually can do and the supports they need to do it than standardized tests scores.

Students with disabilities who receive adaptations and accommodations of curriculum do so on the strength of an individualized plan. The assessment is then on the basis of this educational plan.

7. *How can we guarantee the safety (physical and emotional) of the other students when a student with emotional or behavioral disabilities is placed in a general education classroom?*

It is impossible to guarantee that every classroom, hallway, playground, lunchroom, and bus will always be completely safe. Violence can be a problem in all aspects of society. There is violence in homes, on the streets,

and in restaurants, malls, and workplaces. Concomitantly, an increasing number of children are perceived as troubled or troubling to their teachers, community, or family. Clearly, this is a societal problem and not solely education's responsibility.

Permanent solutions to student and societal violence will emerge only through community, interagency, and school collaboration. Yet, some solutions are emerging for addressing the needs of students with behavioral/emotional challenges and making schools more safe and welcoming learning environments.

First, the most effective and first "line of defense" against a student's rule-violating behavior is effective instruction with personalized accommodations and motivating learning experiences. Second, we need to develop resources and services and bring them to students experiencing behavioral/emotional challenges. This includes, but is not limited to, strategies for promoting and teaching responsibility, and anger management and impulse control; social-skill instruction; strategies for involving, empowering, and supporting students and family members; increased collaboration among and personal support for students from the adults at the school; and breaking with the traditional paradigm of schooling and what constitutes a student's day.

These and other supports and services for assisting students who are "troubled or troubling" can be brought to the school setting. It is unnecessary to send students away and immerse them in classroom or separate programs exclusively for children identified as emotionally or behaviorally challenging and counterproductive to send such students to a climate and culture of dysfunction and disturbance where they will have limited access to prosocial models of behavior and get a message that they do not belong with their peers. After all, children tend to live-up to expectations, positive and negative. Isolation, incarceration, and exclusion set up a heartbreakingly vicious cycle. A person who feels a sense of alienation and exclusion is punished for giving evidence of lack of belonging through disruptive behavior by being further excluded and alienated, which then gives rise to accelerated rule-violating behavior. Is it any wonder that removing students with emotional/behavioral challenges from the regular classroom often results in increases in aggressive or violent behavior?

Clearly, meeting the complex psychological and educational needs of students who are troubled or troubling is a difficult task. Matching intervention and support strategies to the life circumstances, stresses, and context from which an individual child operates requires thoughtful and careful consideration by teams of educators, parents, community-members, and students who care about and are committed to the child's survival and success.

8. *Inclusion would be nice, but it is unrealistic, if not impossible, given the situation that exists in our schools today. There is only one teacher per class. Class size is large. How can a teacher be expected to meet the needs of all children under such circumstances?*

A teacher working alone with traditional teaching methods (e.g., teacher-directed, predominantly independent or competitive student work structures, and at the same performance standard for all children) is likely to be frustrated when attempting to accommodate increased student diversity. A strikingly different organizational structure—a teaching team—is necessary to meet the diverse needs of a heterogeneous student body.

Inclusive education redefines the role of the classroom teacher from the "lone ranger" to a "partner with supports." A teaching team is an organizational and instructional arrangement of two or more members of the school and greater community who share planning, instructional, and evaluation responsibilities for the same students on a regular basis over an extended period of time.

This type of organizational structure capitalizes on the diverse experiences, knowledge bases, and instructional approaches of various team members and allows for more immediate and accurate diagnosis of student needs and more active student learning.

9. *Won't children with disabilities be teased and ridiculed by the other children?*

Probably some children will be teased, and they might do some teasing themselves, too. An unfortunate reality in many of our schools is that children face ridicule, teasing, and rejection. We would venture to guess that some of the readers of this book experienced teasing from peers during their school careers (e.g., on the playground, as a child; or in the faculty lounge, as a teacher). People are teased for many reasons, including differences in perceived abilities, physical characteristics, ethnic background, religion, language, culture, and socioeconomic status. Often, people make fun of what is new, unusual, or unfamiliar. Paradoxically, teasing sometimes can be a misguided attempt to express liking or attraction and build personal connections. The solution to the problem is not the removal of anyone who is different.

It is unlikely that adults will ever completely eliminate teasing and ridicule among children. There are, however, strategies to reduce it. Teachers can further reduce teasing by directly teaching children the reasons for and the results of name calling, teasing, and ridicule, and by employing learning structures such as cooperative learning groups, which require and acknowledge positive treatment of classmates. Also, activities that stir concern for social justice have been effective in helping middle and high school students with little to no experience with persons with disabilities build support for and minimize teasing of students with disabilities. Engaging students in planning for the transition of a student with disabilities to become a welcomed member of their school community has had similar positive effects.

At the heart of the solution to teasing is teacher and administrator modeling. Students observe, reflect on, and imitate adult behavior toward people who are different and the problem-solving strategies they employ to deal with conflict and issues such as teasing and discrimination. Experience has it that less ridicule occurs in inclusive schools. Students who begin their educational careers with others with disabilities seem comfortable with and accepting of differences.

10. *Are inclusion advocates calling for the elimination of special educators? How will children's unique needs be met in general education classrooms where they will not have access to therapists and other trained personnel?*

Inclusion proponents are *not* calling for the elimination of special education or other specialists such as psychologists, physical, and occupational therapists, and social workers. In fact, inclusionary environments *require* the participation of professionals who possess breadth and depth in many knowledge bases (e.g., human development and individual differences, particular reading or writing interventions, alternative communication strategies, mobility instruction, impulse control techniques). The goal is always to ensure that every student receives needed supports and resources. Therefore, what is being called for is a change in the way some specialized personnel deliver their expertise. Those who worked alone and pulled children away from general education are being asked to work together to figure out how to address students' needs in the context of general education. For specialists, this means being willing and able to take on the added responsibilities of becoming collaborators, models, coaches, and members of team teaching arrangements so as to pass on the essential elements of their specialty to teachers, parents, volunteers, students, and others. The end result is desegregation of adults and increased student access to the valuable services and expertise that specialists and classroom teachers can jointly provide.

B) State-level Directives towards Inclusion

Though the Persons with Disability Act clearly states that students with disabilities will be provided with certain modifications and amendments, it is the directive issued by the School-leaving Examination Board that sets this process in motion. The Central Board for Secondary Education (CBSE) in two states has been very clear in this regard. These changes are reproduced below. All inquires in other states of India revealed discouraging results. However, since such information is outdated very quickly, it is suggested that school administrators, parents, educators or students could contact the state education board (addresses included in the Appendix) for up-to-date and detailed information.

Special Concessions being Given to the Spastic, Physically Handicapped, Blind and Dyslexic Candidates Appearing for Board Examinations of CBSE

Exemption from examination in the third language; permission to use an amanuensis and allowance of an additional 60 minutes time for each external examination. Consider the physiotherapeutic exercises as equivalent to Physical and Health Education course of the board; the option of studying one compulsory language as against two. However, this language should be in consonance with the overall spirit of the three language formula prescribed by the board. Besides one language, any four of the following subjects may be offered: Mathematics, Science, Social Sciences, another language, Music, Painting and Home Science.

In addition to the above concessions, the center superintendents have been requested to make arrangements for conduct of examination of such candidates on the ground as far as possible.

Rules for Appointing an Amanuensis

1. An amanuensis must be a student of a class lower than the one for which the candidate is taking the examination.
2. The superintendent of the examination center concerned shall choose a suitable amanuensis and forward immediately, to the concerned regional officer of the board, a report giving full particulars of the candidate and of the amanuensis for his consideration and approval.
3. The superintendent shall arrange a suitable room for the candidate for whom an amanuensis is allowed and appoint one special assistant superintendent to supervise his examination.
4. Such a candidate shall pay fee as may be prescribed for use of amanuensis. However, a blind or physically handicapped or spastic candidate will be provided service of an amanuensis free of cost.
5. The amanuensis shall be paid by the board a remuneration as prescribed from time to time.

The Maharashtra Secondary and Higher Secondary Education Board Act, 1965, made the following regulations further to amend the Maharashtra Secondary and Higher Secondary Education Boards' Regulations, 1977, made by the Maharashtra State Board of Secondary and Higher Secondary Education. The Sub-Section (1) read with clause (c) of Sub-Section (2) of Section 36 of the Maharashtra Secondary and Higher Secondary Education Boards Act, 1965 (MAH X LI of 1965), having been sanctioned by the state government under Sub-Section (3) of Section 36 of the said Act, are reproduced here for general information:

1. These regulations may be called the Maharashtra Secondary and Higher Secondary Education Boards Amendment of 1999.
2. They shall be deemed to come into force from the date of Government Resolution.
3. In the Maharashtra Secondary and Higher Secondary Education Boards' Regulation, 1977, in page no. 211 and serial no. 7, instead of the sentence: "Students who will be required to submit concessions to blind, deaf, dumb, spastic, physically disabled, and learning disabled (dyslexia, dyscalculia, dysgraphia candidates)," prescribed in regulation page no. 211 and serial no. 7, the following shall be replaced:

   - Spastic candidates shall be given two hours extra time to solve the question paper and learning disabled candidates shall be given one hour extra to solve the question paper. These candidates shall be permitted to type or write the answer scripts or they shall be permitted to take the help of a writer for the entire paper or part of the paper in case the candidate feels tired or too exhausted while typing or writing the paper. The writer will be provided in consultation with the head of the concerned institution. The writer shall be a person not directly concerned with teaching the candidate but able to understand the candidate's speech. They shall be chosen very carefully and instructed to write down exactly what the spastic or learning disabled candidate dictates.

     Before the examination commences, an undertaking shall be taken from the writer, to the effect that there will be no misuse of the concession. The institution shall arrange to provide typewriters, tables, chairs (specially made for such students) etc., if necessary, without any charge to the Board. However, the supervision charges at the time of the examination will be borne by the Board.
   - These candidates will be allotted the nearest examination center of their choice and further, the seating arrangement of these candidates shall be made in a separate room.
   - In the case of deaf and dumb and learning disabled candidates, teachers from the junior college concerned may be permitted a period of maximum 15 minutes to explain the question paper to the concerned candidates in the examination hall.
   - Deaf and dumb, spastic, and learning disabled candidates shall be permitted to offer one language, i.e., English only instead of two languages. Candidates appearing under vocational group shall be permitted to offer only one language, i.e., English.
   - Deaf and dumb, spastic, and learning disabled candidates selecting Art, Commerce or Science streams shall be permitted to offer one language and five more subjects from the optional group instead of the two languages and four optional subjects.
   - In the case of blind, deaf and dumb, physically disabled, spastic, and learning disabled candidates selecting vocational course, a certificate of having completed the course satisfactorily issued by the head of the institution specially recognized for imparting education to such students shall be considered valid for HSC examination.
   - Blind, spastic, physically disabled, and learning disabled candidates shall be exempted from drawing figures, maps and graphs, etc., and the marks for these shall be proportionately increased. However, all these candidates will have to appear for the practical examination in the respective subjects.

Concession for Students with Learning Disabilities Studying in School upto the 12th Grade

Among the disabled students studying upto 12th standard, dyslexics, dysgraphics and dyscalculics are included. The government was considering passing an all-inclusive G.R. for all the educational concessions given to educate only compromised students. According to the G.R., educationally compromised school students will get the following educational concessions:

- For students with learning disabilities of grade 1st to 9th and grade 11th, along with the written test, the students shall also have an oral test for unit and semester examinations.
- All students with learning disabilities of grade 1st to 12th shall be allowed to have 30 minutes (half an hour) more than the allotted time for all written tests.
- Students with learning disabilities, for grade 10th and 12th examinations, can choose the center close to their residence.
- These students are exempted from drawing figures, maps, and graphs in written examination and the marks for these questions and sub-questions (Geometry, Science, and Geography) should appropriately be converted.
- These students can produce completion certificates for the practical from the recognized institutes for certain subjects such as work experience, social service, and technical subjects where practicals are necessary.
- Only failed learning disabled students, should obtain maximum 20 marks for passing in one or more subjects.
- Instead of three languages, dyslexic and dysgraphic students can opt for two languages and one subject from the subjects included under work experience.
- Students with dyscalculia are allowed to give examination of 7th grade mathematics (75 marks) and work experience (75 marks) of total 150 marks instead of Algebra and Geometry.
- Learning disabled students are exempted from spelling mistakes and mathematical calculation mistakes (writing numbers in wrong order).

Regarding this, the Regional Educational Deputy Director should certify the student as learning disabled as per the medical certificate. The concerned educational authorities (primary/secondary) should give proper directions to the concerned school headmasters and see to it that the student is not deprived of approved concessions.

The concerned divisional boards will see to it that at the time of 10th and 12th grade examinations the concerned authorities will get proper suggestions and confirm that the deserving students get government approved concessions.

Regarding Action to be Taken to Bring Dyslexic Students into the Mainstream of School Education

With a view to bringing dyslexic students into the mainstream of school education, a committee has been constituted under the Chairmanship of Secretary, Education, Department of Education, MHRD. Minutes of the first meeting of the said committee held on January 22, 2001, are given here:

In accordance with the decision recorded in para 5 of the aforesaid minutes, you are requested to take note of the following:

1. Every school shall make an independent register of dyslexic students for registering the names of such students, after carrying out the necessary investigation and it will be obligatory to maintain such registers.
2. The above suggestion may be brought to the notice of the Education Officers/Educational Institutions under your control and a copy of instructions issued to them in this regard may be endorsed to this department.
3. In regard to the subject under consideration a Writ Petition No. 4011/2000 filed in the Mumbai High Court was heard on February 27, 2001. During the course of the hearing the Honorable High Court has directed that the government should take immediate steps for bringing dyslexic students into the mainstream. In the context of the direction of the Honorable High Court, it is important to take immediate action in this regard. You are requested to bring the aforesaid instruction to the notice of all concerned and ensure to its implementation.
4. In the event of educational institutions experiencing difficulties in identifying dyslexic students or in case further information is required about such students, all concerned may be requested to contact Secretary, Maharashtra Dyslexia Association, Dr. Ambedkar Road, Khar (West), Mumbai.

Extract of By-laws Passed by CBSE for Dyslexic Children Appearing for SSC, Dated February 2001

RULE 24
Exemption to Spastic, Blind, Physically Handicapped, and Dyslexic Children.

24(i) Blind, physically handicapped and dyslexic students appearing for the Secondary School Examination or Senior School Certificate Examination are permitted to use an amanuensis and shall be allowed an additional one-hour (60 minutes) time for each paper.

24(iii) Dyslexic, spastic candidates, and candidates with visual and hearing impairment have the option of studying one compulsory language as against two. This language should be in consonance with the overall spirit of the three language formula prescribed by the Board. Besides one language, any four of the following subjects will be offered: Mathematics, Science, Social Science, Another Language, Music, Painting, and Home Science.

ADDED RULE
Rule 41(v): Heads of all affiliated institutions shall be required to issue a Certificate of School based valuation covering co-cognitive and other related areas of learning, based on continuous and comprehensive evaluation of students who will be completing a course of study of 10 years.

ADDED RULE 6.5
The student shall be admitted in grade 9th and above in a school affiliated with the Board after the 31st day of August of the year except with prior permission of the Chairman, CBSE/Competent Authority as may have been defined in the State/Union Territory Education Acts. The application for permission to grant admission after 31st of August shall be routed through the Principal of the school specifying the reasons which are unavoidable. The candidate shall complete the required percentage of attendance (75%) for grades

9, 10, 11 and 12th as per examination by-laws of the Board to make him/her eligible for the examinations. In such cases where the admission by the candidate could not be taken in a higher class by the stipulated date because of late declaration of results by the Board such permission would not be required, provided the candidate applied for admission within a fortnight of the declaration of the result.

Extracts of the Concessions Available to Candidates with Special Difficulties

Examination of candidates who are under some disability

Part 1: Available concessions (pre-award procedures)
The Council is prepared to give special consideration and make necessary arrangements for candidates who are handicapped in any way which might have an effect on their performance in the ICSE/ISC Examin-ation as follows:

Special Difficulty Procedure

Disability, illness or other misfortune: When a candidate suffers some injury, bereavement or other misfortune which may adversely affect his or her performance in the examination, the special difficulty procedure is used. A form is submitted to the Council by the Principal of the candidate's school and the candidate's work is then given special consideration by a committee before the issue of the result. The Council's committee does not give a "blanket" compensation but treats every case on its merits, for experience has shown that candidates working under similar unusual stress are affected in widely different ways. For this reason the special difficulty form provides for performance of the affected candidate to be compared with that of unaffected classmates.

Special Arrangements

Depending on the nature and degree of the handicap the Council is prepared to make additional special arrangements. Subject to the convener concerned being willing and able to provide the necessary facilities. And to the candidate accepting responsibility for any additional expenses which may be incurred. The following special arrangements are the most common either singly or in various combinations:

(*a*) **Allowance of additional time:** The normal maximum additional allowance is at the rate of 15 minutes in a one-hour paper, 30 minutes in a two-hour paper, and 45 minutes in a three-hour paper, but these allowances may be varied according to circumstances. When a candidate's speed of writing is affected by his handicap a greater allowance may be granted in a paper requiring extensive writing such as English Literature, or History than in a paper of for example the short-answer type.
(*b*) **Use of an amanuensis:** When a candidate's performance is affected to such an extent that any reasonable allowance of extra time would not meet the difficulty, the use of an amanuensis may be permitted (with or without extra time). The amanuensis normally would be a fellow pupil, who has not reached the same academic standard in the subject as the candidate. Similar arrangements may be permitted in practical examinations.

(*c*) The typing of answers by the candidate (Vide 3[i]).
(*d*) The question paper may be read out, but not explained in any way, to candidates who have defective eyesight or a certified reading disability.
(*e*) If a candidate unavoidably misses part of the examination in a subject, the Committee is usually willing to make an allowance based on the work actually presented, provided that this amounts to at least half the total examination in the subject in terms of marks available and covers a satisfactory proportion of the syllabus.
(*f*) Permission for the candidate to sit for the examination in hospital under supervision arrangements having been approved in advance by the Council. The following conditions apply:

(*i*) A medical certificate must be submitted confirming the need for the concession.
(*ii*) Satisfactory invigilation must be guaranteed, in consultation with the Convenor/Council, and details provided to the Council of the proposed invigilator. The invigilator must not be a member of the candidate's own family, but any responsible person may be named, preferably a teacher of another Council school.
(*iii*) Any additional costs incurred are a matter of local arrangement in which the Council plays no part.
(*iv*) Unless the place of the examination is close enough to the school for question papers to be handed to the candidate after the start of the examination at the main center and for the complete script to be collected without undue delay, the transfer procedure must be followed, i.e.,

- The Council must be requested to provide question papers packed separately for the use of the candidate.
- The script must be dispatched in accordance with special instructions which the supervising examiner receives from the Council.
- The supervising examiner at the main center must be instructed NOT to show candidate as "absent" but to attach a note to the attendance list explaining that the script in question is being dispatched separately.
- If the candidate is suffering from an infectious disease, the school must seek the advice of the school doctor or a registered medical officer about the disinfection of the scripts before their dispatch to the Council.

(*g*) If the candidate is unable to take a paper for no fault of her/his own at the normal time, she/he may be allowed to take the paper later provided that security can be guaranteed. The Council requires written confirmation that the candidate has had no access, directly or indirectly, to information about the contents of the question paper. In all but the most exceptional circumstances (e.g., isolated in hospital) the maximum permissible deviation from the normal timetable is 24 hours.
(*h*) Confidentiality. The "need to-know" principle should be observed in cases affecting local candidates when they concern highly personal matters (e.g., parental discord). To avoid possible embarrassment to staff who may know the family in question, all relevant correspondence should be kept in a special confidential file.

Medical Certificate

Students with learning disability should be examined by the neurologist on recommendation of a child specialist/special coach. For this purpose, medical certificate in the prescribed format issued by the Board and filled in by the neurologist should be countersigned by the District Surgeon. All Headmasters/Principals are requested to provide detailed information of such students at the beginning of the academic year with medical certificate.

C) List of State Disability Commissioners

Andhra Pradesh

Mr. R. Sundara Vadan, IFS
Commissioner Disabled Welfare & State
Commissioner under Persons with
Disabilities Act 1995
Government of Andhra Pradesh
6th floor, Chandra Vihar
M.J. Road, Nampally
Hyderabad – 500 001.
Tel.: 040-4619048, 4734873 (O)
3547785, 3545814, 3550058 (R)
Fax: 040-4619048
E-mail: dw_cheyutha@yahoo.co.in

Arunachal Pradesh

Dr. Mrs. Asha James
Secretary & Commissioner (Disabilities)
Social Welfare Department
Government of Arunachal Pradesh
Itanagar – 791 111
Telefax: 360-290233 (O)
0360-290244 (R)

Assam

Mr. H. Sonowal
Principal Secretary & Commissioner (Disability)
Department of Social Welfare
Government of Assam
Guwahati
Tel.: 0361-261402
Fax: 0361-260900 (C.S. Fax)

Bihar

Mr. G.S. Kang
Secretary & Commissioner
Social Welfare Department
Government of Bihar
Patna – 800 001
Tel.: 0612-2224742, 2221718 (O)
2239578 (R)
Fax: 0612-226352
Telefax: 2222099

Mr. Gautam Goswami
Director Social Welfare &
State Commissioner (Disabilities)
Social Welfare Department
Government of Bihar
Patna – 800 001
Tel.: 0612-211718
Fax: 0612-227672

Delhi

Mrs. Neeru Nanda
Commissioner Disabilities &
Director Social Welfare
Government of the N.C.T. of Delhi
1, Canning Lane, K.G. Marg
New Delhi – 110 001
Tel.: 011-3387416
Fax: 3388813, 3071101

Mr. K.J.R. Burman
Dy. Commissioner
Tel.: 3384942

Ms. Arti Kapoor
Desk Officer
Tel.: 3384942

Goa

Mrs. Reena Ray
Secretary & Commissioner (Disabilities)
Social Welfare Department
Secretariat
Panaji, Goa
Tel.: 0832-224801
0832-420264 (R)
Fax: 0832-224801

Gujarat

Mr. Avinash Kumar
Commissioner (Disabilities)
Social Justice & Empowerment Department
Government of Gujarat
Old Vidhan Sabha Building
1st Floor, Sector-17
Gandhinagar – 382 017
Tel.: 079-3220631
079-7470644 (R)
Fax: 079-3223529
079-3220631

Mr. K.N. Shelat, IAS
Commissioner, Rural Development
Block No. 9, 1st Floor
Dr. Jivray Mehta Bhawan
Gandhinagar – 382 010
Gujarat
Tel.: 079-3220603
Fax: 3228645

Haryana

Mr. Mohan Singh Ahluwalia
State Commissioner (Disabilities)
Social Justice & Empowerment
Government of Haryana
SCO No. 68-70
Sector-17/A, Chandigarh
Tel.: 0172-704212 (O)
Fax: 0172-702749

Himachal Pradesh

Mr. Ajay Mittal
Commissioner Disabilities & Secretary
Department of Social, Women & Schedule Caste Welfare
Government of Himachal Pradesh
Shimla – 171 002
Tele/Fax: 0177-221902, 221586, 2621586

Karnataka

Mr. D. Thangaraj
Secretary & Commissioner (Disabilities)
Women & Child Development
Government of Karnataka
Bangalore
Mobile: 9844031290, 6685922 (R)
Tel.: 080-(Direct) 5482640, 5482641, 2200247

Mr. Puttaswamy, Director
Tel.: 2866066, 2860907
Fax: 080-5482641

Mr. Pradeep Kumar
Assistant Commissioner (Disabilities)
Bangalore
Tel.: 080-5482641/640
Mobile: 9845153606

Kerala
Dr. N. Ahamed Pillai
State Commissioner and Ex-officio Secretary to Government (for Persons with Disabilities)
Government of Kerala
Room No. 113, Secretariat Annexe
Thiruvananthapuram – 12
Tel.: 0471-518893, 324004 (O)
0471-444777 (R)
Fax: 333115

Mr. N. Chandrasekharan Nair
Chief Secretary

Madhya Pradesh

Mr. M.M. Joshi
Commissioner
(Social Welfare Disabled)
Government of Madhya Pradesh
A-39, Professor Colony
Civil Lines, Purana Post Office
Bhopal – 562 003
Tel.: 0755-2660996 (O)
0755-661635 (R)
Fax: 0755-552665

Maharashtra

Mr. Sanjay Chahan Dey
Commissioner (Disabilities)
Government of Maharastra
3, Church Road
Pune – 411 001
Tel.: 020-6126471, 6122061 (Direct)/6137083
Fax: 020-6126698

Manipur

Mr. O.N. Singh
Commissioner (Disabilities)
Social Welfare Department
Old Secretariat
Room No. 183
Government of Manipur
Imphal – 795 001
Tel.: 0385-22220216 (O)
0385-2222230 (R)
Fax: 0385-222629

Meghalaya

Mr. S.S. Gupta
Commissioner & Secretary
Government of Meghalaya
Social Welfare Department
Room No. 112, Additional Secretariat Building
Shillong – 793 001
Tel.: 0364-223580, 222754
Fax: 225978

Mizoram

Mr. V. Pachuau
Secretary & Commissioner (Disabilities)
Social Welfare Department
Government of Mizoram
Aizwal
Tel.: 0389-324542
Fax: 0389-326330

Nagaland

Mr. H.A. Hetovi, IAS
Commissioner, Disabilities Cell
Nagaland Civil Secretariat
Government of Nagaland
Social Security & Welfare Department
Kohima – 797 001
Tel.: 0370-270284
0370- 241366 (R)
Fax: 222410, 272071

Orissa

Ms. Madhur Sarangi
Secretary & Commissioner (Disabilities)
Women & Child Development
Government of Orissa
Bhubaneshwar – 751 001
Tel.: 0674-536775 (O)
0674-536767(R)
Fax: 0674-406756, 407142

Punjab

Mr. Sudhir Mittal
Commissioner (Disabilities)
Government of Punjab
Room No. 26, 7th Floor
Punjab Secretariat Civil
Chandigarh

Tel.: 0172-740770 (Direct),
0172-773969 (R)
Fax: 0172-740936/740770

Rajasthan

Mr. Damodar Thanvi
Commissioner (Disabilities)
(A statutory office of the Government of Rajasthan)
Ambedkar Bhawan, Behind Pant Krishi Bhawan
Bhagwan Dass Road, Jaipur
Tel.: 0141-2205969 (R)
Fax: 0141-2382497

Mr. Y.C. Sharma
Additional Commissioner (Disabilities)
Social Welfare Department
Government of Rajasthan
Ambedkar Bhawan
Behind Pant Krishi Bhawan
Bhagwan Dass Road
Jaipur – 302 005
Tel.: 0141-383641 (O)
0141-742171 (R)
Fax: 0141-382497

Sikkim

Ms. Chanderkala Cintury
Secretary & Commissioner
Social Welfare Department
Government of Sikkim
Gangtok
Tel.: 03592-23453, 03592-25596/26151
Fax: 03592-23453

Tamil Nadu

Mr. Mohan Verghese Chunkath
Commissioner (Disabilities)
No. 2 Bakthvatchalam Road
Tamil Nadu Slum Clearance Board Building
Vishalakshi Garden
Mylapore, Chennai – 600 004
Tel.: 044-4933031 (O)
044-4791040 (R)
Fax: 044-4959130

Mr. Mohan Chumkath
Tel.: 4910303 (R)

Tripura

Mr. S. Sailo
Secretary & Commissioner (Disabilities)
Social Welfare & Social Education Department
Government of Tripura
Agartala - 799 001
Telefax: 0381-326033

Uttar Pradesh

Ms. Aradhana Johari
Commissioner (Disabilities)
1011, Indira Bhawan, Lucknow
Tel.: 0522-287050 (O)

Shri S.K. Srivastav
Dy. Commissioner
Tel.: 0522-288196 (O)
Fax: 287089, 345446 (R)
E-Mail: dirhw@u.p.nic.in

West Bengal

Mr. Sabyasachi Sengupta, IAS
Commissioner (Disabilities)
Government of West Bengal
45, Ganesh Ch. Avenue
Kolkata – 700 013
Tel.: 033-2374731, 2143339, 4752412
Fax: 033-2375379

Chandigarh
Mr. G.K. Marwah
Secretary & Commissioner (Disabilities)
Social Welfare Department

Chandigarh Administration
Chandigarh
Tel.: 0172-741142 (O)
0172-794105 (R)
Mobile: 9814009141
Fax: 0172-741461

Mr. J.R. Kundal
Secretary, Social Security
Development of Women & Child
Room No. 616, 6th Floor
Mini Secretariat
Sector-9, Chandigarh – 160 009
Tel.: 0172-743721

Dadra & Nagar Haveli

Mr. S.L. Bansal
Director Social Welfare
& Commissioner (Disabilities)
Social Welfare Department
Administration of Dadra & Nagar Haveli
Silvassa
Tel.: 0260-642037
Fax: 0260-642787

Pondicherry

Mr. Jaya Prakash
Secretary & Commissioner (Disabilities)
Social Welfare Department
Government of Pondicherry
Pondicherry
Tel: 0413-2334143 (O)
0413-2220138 (R)
Fax: 0413-2334082

Andaman & Nicobar Islands

Mr. S. Hema Chandran
Secretary & Commissioner (Disabilities)
Social Welfare Department
Andaman & Nicobar Administration
Port Blair
Telefax: 03192-34880

Lakshadweep

Mr. K.I. Sayed Mohammed Koya
Director & Commissioner (Disabilities)
Social Justice Empowerment & Culture
Lakshadweep Administration
Kavarati
Tel.: 04896-62140

Daman & Diu

Mr. K.R. Kishore
Commissioner for Persons with Disability
Social Welfare Department
Collectorate
U.T. of Daman & Diu
Daman – 396 220

Uttaranchal

Mr. R.K. Verma
Secretary, Social Welfare & Commissioner
(Disabilities), Sachivalaya Uttaranchal
FRDC Social Welfare
Rajpur Road, Dehradun, Uttaranchal
Tel.: 0135-2652458 (O)
2741589 (R)
Mobile: 9837065301
Fax: 712114

Chhattisgarh

Mr. Vivek Aggarwal
Commissioner (Disabilities)
Nirmala STD PCO
Baniya Para, Durg – 491 001
Chhattisgarh
Tel.: 788-325470 (O)
788-323115 (R)
Mobile: 9826113552
Fax: 0788-310163, 0788-324690

Jharkhand

Mr. Sukhdev Singh
Commissioner
Disabilities
Welfare Department
Government of Jharkhand
Ranchi, Jharkhand
Tel.: 0651-2403749, 403837
Mobile: 9835158917
Fax: 0651-403836

Dr. Alok Goyal
Director, Social Welfare
Tel.: 0651-403739

Mr. Sukhdev Singh
Spl. Secretary, Social
Director, Social Welfare
Tel.: 0651-2403749
Mobile: 9835158917

Jammu & Kashmir

Mr. S.L. Bhatt
Principal Secretary &
Commissioner (Disabilities)
Social Welfare Department
J&K, Civil Secretariat
Jammu
Tel.: 0194-2452271

Mr. S.S. Biloeria
Chief Secretary
Tel.: 0191-2544338, 2546773 (O)
Fax: 2546188

Mr. N.R. Gupta
Tel.: 0191-2542759 (O)
2431202, 2662500 (R)

D) The Standard Rules on the Equalization of Opportunities for Persons with Disabilities

Adopted by the United Nations General Assembly, 48th Session, Resolution 48/96, annexure, of December 20, 1993.

Among the major outcomes of the Decade of Disabled Persons was the adoption, by the UN General Assembly, of the Standard Rules on the Equalization of Opportunities for Persons with Disabilities in 1994. Although not a legally binding instrument, the Standard Rules represent a strong moral and political commitment of governments to take action to attain equalization of opportunities for persons with disabilities. The rules serve as an instrument for policymaking and as a basis for technical and economic cooperation.

The Rules incorporate the human rights perspective, which had developed during the decade. The 22 Rules concerning disabled persons consist of four chapters—preconditions for equal participation, target areas for equal participation, implementation measures, and the monitoring mechanism—and cover all aspects of life of disabled persons.

Reproduced below are Rules 4–6 due to their importance for education:

Rule 4: Support Services

States should ensure the development and supply of support services, including assistive devices for persons with disabilities, to assist them to increase their level of independence in their daily living and to exercise their rights.

- States should ensure the provision of assistive devices and equipment, personal assistance and interpreter services, according to the needs of persons with disabilities, as important measures to achieve the equalization of opportunities.
- States should support the development, production, distribution and servicing of assistive devices and equipment and the dissemination of knowledge about them.
- To achieve this objective, the generally available technical know-how should be utilized. In states where high-technology industry is available, it should be fully utilized to improve the standard and effectiveness of assistive devices and equipment. It is important to stimulate the development and production of simple and inexpensive devices, using local material and local production facilities wherever possible. Persons with disabilities themselves could be involved in the production of those devices.
- States should recognize that all persons with disabilities who need assistive devices should have access to them as appropriate, including financial accessibility. This may mean that assistive devices and equipment should be provided free of charge or at such a low price that persons with disabilities or their families can afford to buy them.

- In rehabilitation programs for the provision of assistive devices and equipment, states should consider the special requirements of girls and boys with disabilities concerning the design, durability, and age-appropriateness of assistive devices and equipment.
- States should support the development and provision of personal assistance programs and interpretation services, especially for persons with severe and/or multiple disabilities. Such programs would increase the level of participation of persons with disabilities in everyday life at home, at work, in school and during leisure-time activities.
- Personal assistance programs should be designed in such a way that the persons with disabilities using the programs have a decisive influence on the way in which the programs are delivered.

Rule 5: Accessibility

States should recognize the overall importance of accessibility in the process of the equalization of opportunities in all spheres of society. For persons with disabilities of any kind, states should (*a*) introduce programs of action to make the physical environment accessible; and (*b*) undertake measures to provide access to information and communication.

Access to the Physical Environment

- States should initiate measures to remove the obstacles to participation in the physical environment. Such measures should be to develop standards and guidelines and to consider enacting legislation to ensure accessibility to various areas in society, such as housing, buildings, public transport services, and other means of transportation, streets and other outdoor environments.
- States should ensure that architects, construction engineers, and others who are professionally involved in the design and construction of the physical environment have access to adequate information on disability policy and measures to achieve accessibility.
- Accessibility requirements should be included in the design and construction of the physical environment from the beginning of the designing process.
- Organizations of persons with disabilities should be consulted when standards and norms for accessibility are being developed. They should also be involved locally from the initial planning stage when public construction projects are being designed, thus ensuring maximum accessibility.

Access to Information and Communication

- Persons with disabilities and, where appropriate, their families and advocates should have access to full information on diagnosis, rights and, available services and programs at all stages. Such information should be presented in forms accessible to persons with disabilities.
- States should develop strategies to make information services and documentation accessible for different groups of persons with disabilities. Braille, tape services, large print and other appropriate technologies should be used to provide access to written information and documentation for persons with visual impairments. Similarly, appropriate technologies should be used to provide access to spoken information for persons with auditory impairments or comprehension difficulties.

- Consideration should be given to the use of sign language in the education of deaf children, in their families, and communities. Sign language interpretation services should also be provided to facilitate the communication between deaf persons and others.
- Consideration should also be given to the needs of people with other communication disabilities.
- States should encourage the media, especially television, radio and newspapers, to make their services accessible.
- States should ensure that new computerized information and service systems offered to the general public are either made initially accessible or are adapted to be made accessible to persons with disabilities.
- Organizations of persons with disabilities should be consulted when measures to make information services accessible are being developed.

Rule 6: Education

States should recognize the principle of equal primary, secondary, and tertiary educational opportunities for children, youth and adults with disabilities, in integrated settings. They should ensure that the education of persons with disabilities is an integral part of the educational system.

- General educational authorities are responsible for the education of persons with disabilities in integrated settings. Education for persons with disabilities should form an integral part of national educational planning, curriculum development, and school organization.
- Education in mainstream schools presupposes the provision of interpreter, and other appropriate support services. Adequate accessibility and support services, designed to meet the needs of persons with different disabilities, should be provided.
- Parent groups and organizations of persons with disabilities should be involved in the education process at all levels.
- In states where education is compulsory it should be provided to girls and boys with all kinds and all levels of disabilities, including the most severe.
- Special attention should be given in the following areas:

  - Very young children with disabilities.
  - Preschool children with disabilities.
  - Adults with disabilities, particularly women.

- To accommodate educational provisions for persons with disabilities in the mainstream, states should:

  - have a clearly stated policy, understood and accepted, at the school level and by the wider community;
  - allow for curriculum flexibility, addition, and adaptation;
  - provide for quality materials, ongoing teacher training and support teachers.

- Integrated education and community-based programs should be seen as complementary approaches in providing cost-effective education and training for persons with disabilities. National community-based programs should encourage communities to use and develop their resources to provide local education to persons with disabilities.

- In situations where the general school system does not yet adequately meet the needs of all persons with disabilities, special education may be considered. It should be aimed at preparing students for education in the general school system. The quality of such education should reflect the same standards and ambitions as general education and should be closely linked to it. At a minimum, students with disabilities should be afforded the same portion of educational resources as students without disabilities. States should aim for the gradual integration of special education services into mainstream education. It is acknowledged that in some instances special education may currently be considered to be the most appropriate form of education for some students with disabilities.
- Owing to the particular communication needs of deaf and deaf-blind persons, their education may be more suitably provided in schools for such persons or special classes and units in mainstream schools. At the initial stage, in particular, special attention needs to be focused on culturally sensitive instruction that will result in effective communication skills and maximum independence for people who are deaf or deaf-blind.

E) List of Recognized School Boards for School Administrators

State	*Board*	*Year of Establishment*	*Administrative Set-up*
Andhra Pradesh	(i) Andhra Pradesh Board of Secondary Education Hyderabad – 500 001 Tel.: 91-40-345343, 3457344	1953	Part of the State Department of Education
	(ii) Andhra Pradesh Board of Intermediate Education Vidya Bhawan Nampally Hyderabad – 500 001 Tel.: 91-40-503315, 503316 www.interboardap.nic.in	1971	Statutory
Assam	(i) Assam Board of Secondary Education Guwahati – 781 021 Tel.: 91-361-23884	1962	Statutory
	(ii) Assam Higher Secondary Education Council Bamunimaidan, Guwahati – 781 021 Tel.: 91-361-27277	1984	Statutory
Bihar	(i) Bihar School Examination Board Sinha Library Road, Patna – 800 017 Tel.: 91-612-226916, 222575, 222576	1952	Statutory
	(ii) Bihar Intermediate Education Council Budh Marg, Patna – 800 001 Tel.: 91-612-232432	1980	Statutory
Goa	Goa Board of Secondary & Higher Secondary Education M-20, Nehru Nagar, A-210 Betim Cross, Alto Betim, Goa – 403 521 Tel.: 91-832-417584, 417593	1975	Statutory

State	*Board*	*Year of Establishment*	*Administrative Set-up*
Gujarat	Gujarat Secondary Education Board Sector 10-B, Gandhi Nagar – 382 043 Tel.: 91-7932-20691 Fax: 91-7932-29421	1960	Statutory
Haryana	Haryana Board of Education Hansi Road, Bhiwani – 125 021 Tel.: 91-1664-44171 Fax: 91-1664-41611	1969	Statutory
Himachal Pradesh	Himachal Pradesh Board of School Education Gayana Lok Parisar, Civil Lines Dharamsala – 176 216, Distt. Kangra Tel.: 91-1892-22773 Fax: 91-1892-22817	1969	Statutory
Jammu & Kashmir	J&K State Board of School Education Rehari Colony, Jammu – 180 005 (November– April) Lalmandi, Srinagar – 190 005 (May–October) Tel.: 91-191-546601 (Jammu) Fax: 91-191-546604 Tel.: 91-194-430821 (Srinagar) Fax: 91-194-431984 E-mail: jkboard@nde.vsnl.net.in	1965	Statutory
Karnataka	(i) Karnataka Secondary Education Examination Board 6th Cross, Malleswaram Bangalore 560 003 Tel.: 91-80-3343391, 2214350 Fax: 91-80-3347670	1966	Part of the State Department of Education
	(ii) Karnataka Board of the Pre-University Education Tech. Edn. Building, Palace Road Bangalore – 560 001 Tel.: 91-80-2264484, 2267595	1970	Part of the State Department of Pre-University Education
Kerala	Kerala Board of Public Examinations Pareeksha Bhawan, Poojappura Thiruvananthapuram – 695 012 Tel.: 91-471-341171, 325106 Fax: 91-471-325106	1949	Part of the State Department of Education

(*Contd. on next page*)

State	*Board*	*Year of Establishment*	*Administrative Set-up*
Madhya Pradesh	Madhya Pradesh Board of Secondary Education Bhopal – 462 011 Tel.: 91-755-551166-71 Fax: 91-755-551499, 555182	1959	Statutory
Maharashtra	Maharashtra State Board of Secondary and Higher Secondary Education Shivajinagar, Pune – 411 010. Tel.: 91-20-5536236, 5536379 Fax: 91-20-5536405 E-mail: msecpun@ip.eth.net http://www.mah.nic.in/msec	1966	Statutory
Manipur	(i) Manipur Board of Secondary Education Imphal - 795 001 Tel.: 91-385-226770, 220889, 220172 Fax: 91-385-222562	1972	Statutory
	(ii) Manipur Council of Higher Secondary Education D.M. College Campus Imphal – 795 001 Tel.: 91-385-224617, 441429	1992	Statutory
Meghalaya	Meghalaya Board of School Education West Garo Hills Tura Meghalaya – 794 102 Tel.: 91-364-223948	1973	Statutory
Mizoram	Mizoram Board of School Education Chaltlang, Post Box 7 Aizawl – 796 012 Tel.: 91-389-340993, 340992, 340995	1976	Statutory
Nagaland	Nagaland Board of School Education Post Box 98, Kohima – 767 001 Tel.: 91-370-22520, 22521 Fax: 91-370-240198 E-mail: nbe@naganet.com	1974	Statutory
Orissa	(i) Orissa Board of Secondary Education Bajrakabati Road, Cuttack – 753 001 Tel. PBX: 91-671-615484, 615460 Fax: 91-671-615305	1965	Statutory

State	*Board*	*Year of Establishment*	*Administrative Set-up*
	(ii) Orissa Council of Higher Secondary Education C-2 Pragnyapith, Samantapur Bhubaneshwar – 751 013 Telefax: 91-674-580126	1955	Statutory
Punjab	Punjab School Education Board Vidya Bhawan, SAS Nagar Phase-8 Mohali – 160 059 Tel.: 91-172-570524, 570081 Fax: 91-172-670524	1969	Statutory
Rajasthan	Rajasthan Board of Secondary Education Ajmer – 305 001 Tel.: 91-145-422597 Fax: 91-145-52394	1957	Statutory
Tamil Nadu	(i) Tamil Nadu Board of Secondary Education Department of Govt. Examinations College Road, Chennai – 600 006 Tel.: 91-44-8272088 Fax: 91-44-8278286	1908	Part of the State Department of Education
	(ii) Tamil Nadu Board of Higher Secondary Education DPI Compound, College Road Chennai – 600 006 Tel.: 91-44-8278796	1982	Part of the State Department of Education
Tripura	Tripura Board of Secondary Education Nehru Complex (Gurkha Basti) (P.O.) Kunjaban, Agartala Tripura West – 799 006 Tel.: 91-381-224818	1973	Statutory
Uttar Pradesh	U.P. Board of High School & Intermediate Education Allahabad – 211 001 Tel.: 91-532-602367 (Allahabad) 91-532-239006 (Lucknow) Fax: 91-532-623182	1922	Autonomous Body under the Department of Education
West Bengal	(i) West Bengal Board of Secondary Education 77/2, Park Street Kolkata – 700 016 Tel.: 91-33-298594	1951 (Reconstituted in 1964)	Statutory

(*Contd. on next page*)

State	*Board*	*Year of Establishment*	*Administrative Set-up*
	(ii) West Bengal Council of Higher Secondary Education Vidya Sagar Bhavan, 9/2 D.J. Block, Sector-II, Salt Lake Kolkata – 700 091 Tel.: 91-33-379661 Fax: 91-33-3345541	1929 (Reconstituted in 1962)	Statutory
All-India Boards	(i) Central Board of Secondary Education 2, Community Center Shiksha Kendra Preet Vihar, Delhi – 110 092 Tel.: 91-11-2249602, 2249628 Fax: 91-11-2215826 E-mail: cepavnesh@hotmail.com Home page: http://www.cbse.nic.in		Autonomous body under the Government of India
	(ii) Council for Indian School Certificate Examinations Pragati House, 47/48, Nehru Place New Delhi - 110 019 Tel.: 91-11-6411706, 6413820 91-11-91556468-9 (Noida) Fax: 91-11-6212051 E-mail : mail@cisce.org Home Page: http://www.cisce.org	1958	Registered Society
	(iii) National Open School A-38, Kailash Colony New Delhi – 110 048 Tel.: 91-11-6481455, 57–59 Fax: 91-11-6211453 E-mail: nossap@nda.vsnl.net.in www.nos.org	1989	Autonomous body under the Government of India

Glossary

A

Abduction: Movement of a limb away from the body.
Abnormal behavior: Activities detrimental to the individual or to society.
Abscess: A cavity containing pus and surrounded by inflamed tissue.
Abstraction: The mental process of forming abstract ideas.
Accommodation: An adjustment made to an environment, situation, or supplies for individual differences.
Achievement tests: A standardized test to assess knowledge in various fields.
Achondroplasia: Most common type of dwarfism, short limbs, normal trunk, large head, depressed nasal bridge, small face, stubby hands, and lordosis. A disorder of the growth of cartilage in the long bones and skull that results in premature ossification.
Acoustic nerve: A cranial nerve composed of fibers from the cochlear nerve and the vestibular nerve in the inner ear, conveys impulses of hearing and balance. Also called eighth cranial nerve.
Acquired: Condition originating after birth.
Action nerves (motor): Carry messages from the brain to part of the body.
Acuity of vision: Testing of the eyes to measure the clarity of vision.
Acute: Beginning abruptly, subsiding after a short period of time.
Adaptation: A change in what students do or a reshaping of the materials students use. Adaptations are essentially the same as modifications, but can specifically refer to the materials and equipment students use to aid in learning. Enlarging the print on a worksheet and audio-taping a textbook are examples of adaptations.
Adduction: Movement of a limb toward the axis of the body.
Admittance: The ability of the auditory system to absorb the flow of acoustic energy; expressed in terms of compliance.
Adolescence: The period in development between the onset of puberty (11–13 years) and completely developed adult form (18–20 years).
Affective learning: The area of learning related to emotions or feelings, rather than thought or knowledge.
Anorexia: Loss of appetite.
Anoxia: Condition characterized by a lack of oxygen.
Antisocial personality disorder: Behavioral patterns that lack moral and ethical standards.
Aphasia: Defective or absent language function.
Arthrogryposis: Multiple contractures, from birth. Curved, stiff joints and weak muscles. The child looks like a wooden puppet.
Asphyxia: Lack of oxygen, unconsciousness, death. Caused by drowning, electric shock, aspiration of vomitus, foreign body in the respiratory tract, toxic gas or smoke, poisoning.

Astigmatism: Light rays cannot be focused in a point on the retina because the curve of the cornea is not equal in all meridians. Vision is blurred, and use of the eyes causes discomfort. The person cannot accommodate to correct the problem. The condition usually may be corrected with contact lenses or with eye glasses ground to neutralize the defect.

Ataxia: Difficulty with balance and coordination, inability to coordinate movement.

Ataxic speech: Faulty formation of the sounds because of neuromuscular dysfunction.

Athetosis: Uncontrolled movements.

At-risk: A term used to identify students who could benefit from some type of short-term support. These students run the risk of not succeeding for one of many reasons, from poor academic skills to excessive absences to personal problem situations.

Atrophy: A wasting or diminution of size.

Attention deficit hyperactivity disorder (ADHD): Child is restless, constantly moving, short attention span, disturbed learning process.

Attention span: Time for which the mental focus is maintained on a specific issue, object, or activity.

Audiologist: A specialist who knows about physiology, pathology, testing and treatment of hearing process.

Audiometry: Hearing test. Determines hearing threshold, pure tone audiometry, speech audiometry, impedance audiometry.

Auditory brainstem responses: Electrical signals or potentials arising in the auditory nerve and brainstem, alternatively called BSER.

Auditory perception: Learning experience going from environment to brain through hearing system and understanding the meanings of sound.

Autism: Subjective, self-centered behavior not altered by external influences. Withdrawal from contact with people.

Automatic gain control: A system used for the automatic control of the maximum acoustic output of a hearing aid.

B

Backache: Pain in back, can be psychosomatic or can be malingering.

Back-knee: Knee bends back more than normal.

Backlog tutions: A special tution for scholastic backwardness giving emphasize on achievement based education.

Bacteria: Small unicellular microorganisms, being spheric (cocci: *streptococci*, *meningococci*, *gonococci*), rod-shaped (bacilli: *salmonella, shigella, E coli, mycobacterium tuberculosis, mycobacterium leprae, pseudomonas*), spiral (spirochetes: *syphilis*, *malaria*, *filaria*), or comma-shaped (vibrios: *cholera*).

Bed sores: Are formed over bony parts of the body when a person lies or sits on that part for long time without moving. Blood circulation of that part is hampered and tissue becomes dead. Also called pressure sores.

Bedwetting: Uncontrolled micturition during sleep.

Behavior disorder: Over-aggressiveness, overactivity, destructiveness, cruelty, truancy, lying, disobedience, perverse sexual activity, criminality, alcoholism, and drug addiction.

Behavior modification: A form of psychotherapy that suggests altered behavior.

Behavior problem: Altered behavior not acceptable to the society.

Behavior: The manner in which a person acts.

Behavioral contract: An agreement between a student or group of students and a teacher or support teacher listing specific actions each person is to demonstrate, the rewards the student will receive for completing the task, and the consequences for failing to do so; also called a contingency contract.

Bell's palsy: Paralysis of the facial nerve.
Bender-Gestalt Test: Is a perceptual motor integrity test. It reflects structural or physiological anomalies of CNS.
Biologic: Pertaining to living organisms and their products.
Biostatistics: Data on births, deaths, diseases, injuries affecting human health. Also called vital statistics.
Birth injury: Trauma suffered by a baby while being born. Some kinds of birth injury are Bell's palsy, cerebral palsy, and Erb's palsy.
Bladder: Membranous sac serving as a receptacle for secretions, e.g., urinary bladder, gall bladder.
Blind spot: A normal gap in the visual field when an image is focused on the retina, occupied by the optic disc. An abnormal gap in the visual field because of a lesion on the retina, optic pathways, hemorrhage or choroiditis, perceived as light spots or flashes.
Blindness: A partial or total inability to see, a physical handicap.
Blindness causes: Dry eye (xerophthalmia), trachoma infection, gonorrhoea in newborn, chlamydia infection, river blindness (onchocercosis), measles, brain damage, eye injuries, and other problems can cause blindness.
Blindness prevention: Keep the children well fed, clean, and healthy. Most blindness is preventable.
Body braces: Body jackets, for severe (more than 40 degree) spinal curves. Braces are not required for minor (20 degree) spinal curves.
Bone age: Stage of development of the skeleton. Is determined by X-ray.
Bone conduction: Transmission of sound via bone, tuning fork.
Bow legs in disease: Short limb dwarfism.
Bow legs: See ***Genu varum***.
Bowel training: Method of establishing regular evacuation by reflex conditioning.
Bowlegs in normal child: Normal up to 18 months age.
Braille: A system of printing for the blind, raised dots can be read by touch.
Brain damage and blindness: Cerebral palsy, birth asphyxia, German measles (rubella) during pregnancy, meningitis, encephalitis.
Brain damage and cerebral palsy: In each child with cerebral palsy, the parts of brain damaged are different. Problems the child will face in functioning depend on the part and severity of brain damage.
Brain damage and fits: Cerebral palsy, birth asphyxia, German measles (rubella) during pregnancy, meningitis, encephalitis.
Brain damage and stroke: Damage in the motor area of the brain causes paralysis or stroke.
Brain tumor: Is a physical handicap. Problem depends on site and size of the tumor.
Brainstem auditory evoked potential: The electric activity recorded from the brainstem in the first 10 msec after an auditory stimulus.
Brainstem evoked response: EEG tracing in response to auditory signals. Also called ABR.
Breast feeding and disability prevention: Antibodies in breast milk prevent polio. Malnutrition is a disability itself. Breast milk can prevent this disability.
Breast feeding in cerebral palsy: Baby may have sucking, swallowing difficulties. If necessary, expressed breast milk can be given by a spoon or a nasogastric tube.
Breast feeding in cleft lip and palate: Put the breast deep into the mouth so that milk comes out on the back of the baby's tongue. To prevent choking, feed in the sitting position with his head tilted forward a little. Sometimes expressed breast milk has to be fed by a spoon.
Breast feeding in Down's syndrome: Breast milk gives antibodies to fight against infections.
Breath holding spells: A behavior problem of infancy, attention-seeking device. Cerebral anoxia during the period of breath holding can cause crying convulsions.

Brittle bone disease: See ***Osteogenesis imperfecta***.
Broca's area: Speech production area of the brain.
Burn: Injury caused by heat, electricity, chemicals, radiation, or gases.
Bursitis: Inflammation of the bursa, the connective tissue structure surrounding a joint.

C

Calipers: See ***Braces***.
Case manager: The special education teacher or therapist who is responsible for the implementation, coordination, monitoring, and/or evaluation of a student's special-needs program. A case manager should be a staff member and is responsible for the paperwork on a student's program.
Cataract: Loss of transparency of the lens of the eye.
Catheter: A hollow, flexible tube to withdraw, or to instill fluids. Made of soft plastic or rubber.
Central masking: The effect by which the threshold of a signal presented to one ear is elevated by a masking sound presented to the other ear.
Cerebral palsy: Brain defect present at birth or shortly thereafter. Paralysis, stiffness, balance problems, abnormal body movements, convulsions, mental retardation, and impaired speech, vision, and hearing. Caused by premature or abnormal birth, birth asphyxia, causing damage to the nervous system. Breathing, sucking, swallowing difficulties after birth. Walking is delayed and scissors gait. Deep-tendon reflexes are exaggerated, slurred speech, delayed sphincter control. Early diagnosis, exercise and training program. Treatment is individualized braces, surgery for deformities, speech therapy, and drugs like muscle relaxants and anticonvulsants.
Chromosome: Threadlike, in cell nucleus, transmits genetic information. Each species has a characteristic number of chromosomes in the somatic cell, which in humans is 46 and includes 22 homologous pairs of autosomes and one pair of sex chromosomes, 22 XY in males and 22 XX in females, with one member of each pair being derived from each parent.
Chronic illnesses: Any illness that persists over a long period of time and affects physical, emotional, intellectual, social or spiritual functioning.
Chronologic age: Time elapsed since birth.
Circumduction: Circular movement of a limb.
Cleft lip: Congenital anomaly, cleft in the upper lip. Also called harelip.
Cleft palate: Congenital defect, fissure in the midline of the palate.
Cognitive learning: The area of learning based on knowledge and reasoning; also called academic learning.
Collaborate: To work, plan, and problem solve with other staff members and professionals in a cooperative manner, sharing responsibilities while utilizing the individual strengths and skills of each person.
Community based rehabilitation: Members of the community start, plan, organize and control the rehabilitation activity. Program is small, local, and user organized.
Compensation or compensatory instruction: Instruction aimed at "getting around" a problem or an area of difficulty. Techniques for compensatory instruction include the use of alternative instruction, alternative techniques, and adaptive equipment. Compensatory instruction for a student having a low reading level could include using books on tape or reading material read out aloud to him or her.
Condom catheter: Used in boys and men who cannot control urine.
Conduction velocity: The speed with which an electrical impulse can be transmitted.
Conductive hearing loss: Sound is inadequately conducted through the external or middle-ear to the sensorineural apparatus of the inner-ear.

Congenital anomaly: Any abnormality present at birth. Also called birth defect.
Congenital rubella: Congenital anomaly caused by maternal rubella in pregnancy.
Congenital: Present at birth.
Consanguinity: Blood relationship between parents.
Contractures: Joint is flexed and fixed. Atrophy and shortening of muscle fibers around the joints.
Convergence testing: Test for turning of eyes inward to see an object close to face.
Convergence: The movement of two objects towards a common point, such as turning of the eyes inwards to see object close to the face.
Cornea: The anterior glasslike transparent part of the eye. Corneal curvature varies in different individuals and at different ages, the curvature being more pronounced in youth than in advanced age. So they need spectacles after 40 years of age.
Co-teaching: An instructional arrangement in which there is more than one adult in a classroom, instructional and classroom responsibilities are defined and assigned, and some type of co-planning is involved. The use of the term co-teaching in this book does not refer to a specific model, and any other adult in the classroom can be called a co-teacher.
Cretinism: Congenital hypothyroidism, dwarfism, mental retardation, puffy facial features, dry skin, large tongue, umbilical hernia.
Crutches: A wooden or metal staff, which reaches from the ground almost to the axilla, to aid a person in walking.

D

Deafness: A partial or complete loss of hearing.
Decibel: A unit of sound intensity.
Deep tendon reflex: A brisk contraction of a muscle in response to a sudden stretch induced by a sharp tap on the tendon of insertion of the muscle. Absence of the reflex means damaged muscle, peripheral nerve, nerve roots, or the spinal cord. A hyperactive reflex means disease of the pyramidal tract above the level of the reflex arc being tested.
Depression: Mood disturbances, sadness, discouragement resulting from personal loss or tragedy.
Development: The gradual change from a simple to a more advanced level of complexity. In humans the physical, mental, and emotional capacities.
Developmental age: Child's developmental progress stated in age.
Developmental pediatrician: A pediatrician who specializes in child development.
Developmental quotient (DQ): Developmental age divided by the chronologic age, multiplied by 100.
Diplegia: Paralysis of both sides of any part of the body.
Dislocation: Displacement of any part of the body from its normal position.
Dominance: The gene that is manifest is dominant; it masks the effect of the other gene, which is recessive.
Down's syndrome: Congenital mental retardation and multiple defects. Also called mongolism. Chromosomal abnormality, presence of an extra chromosome 21. If the mother's age is over 35 years then infants may be hypotonic, flattened occiput, mongoloid slant to the eyes, depressed nasal bridge, low-set ears, large, protruding tongue. The hands are short and broad with a transverse palmar or simian crease; the fingers are stubby. The feet are broad and stubby, congenital heart disease, mental retardation, varies from person to person, average IQ is of 50 to 60 points, the child is generally trainable.
Duchenne's muscular dystrophy: Progressive symmetric wasting of the leg and pelvic muscles. Affects males. It is an X-linked recessive disease.

Dwarf: Abnormally short person.
Dyslexia: Difficulty in reading. Dyslexic persons often reverse letters and words, cannot distinguish the letter sequences in written words, and have difficulty determining left from right.
Dyspraxia: Partial inability to perform skilled movements without problems related to motor or sensory function.
Dystocia: Difficult labor, obstruction or constriction of birth passage or an abnormal size, shape, position, or condition of the fetus.
Dystrophy: Defective nutrition in muscles that does not involve the nervous system, such as fatty degeneration associated with increased size but decreased strength.

E

Ear speculum: A short, funnel-shaped tube attached to an otoscope for examining the ear canal.
Emotional age: Age determined by the stage of emotional development reached.
Emotional deprivation: Lack of adequate warmth, affection and interest, common in institutionalized children, broken homes.
Emotional quotient: A scale to evaluate emotional development of an individual.
Emotional support: Understanding approach that helps patients accept and deal with their illnesses, communicate their anxieties and fears, derive comfort from a gentle, sympathetic, caring person and increase their ability to care for themselves.
Empathy: To recognize and share the emotions of other person, understand that person's behavior. It is an essential quality for effective psychotherapy.
Encephalitis: An inflammatory condition of brain. Usually a viral infection.
Encephalopathy: Any abnormal condition of the structure or function of brain.
Encopresis: Fecal incontinence.
Endemic: Indigenous to a particular geographic area or population.
Enuresis: Incontinence of urine, especially in bed at night.
Environmental stimulation: A right environment that stimulates child development.
Enzyme: A protein that catalyzes chemical reactions in organic matter.
Epidemic: Affecting a significantly large number of people at the same time.
Epilepsy: Recurrent convulsions, sensory disturbances, loss of consciousness or all of these.
Erb's palsy: Paralysis caused by trauma to the upper brachial plexus in childbirth from forcible traction during delivery. The arm on the affected side hangs loosely with the elbow extended and the forearm pronated.
Eustachian tube: A tube that joins the nasopharynx and the middle ear, allowing equalization of the air pressure in the middle ear with atmospheric pressure. Also called auditory tube.
Extension: A movement that increases the angle between two adjoining bones.
External ear: The outer structure of the ear, consisting of the auricle and the external acoustic meatus. Sound waves are funneled through the external ear to the middle ear.
Eye hand coordination: Indicates integrity of brain to move finger from nose to object and back again.

F

Familial: Disease or trait present in families.
Fetal attitude: The relationship of the fetal parts to each other, such as the "military" attitude, in which the fetal head is not flexed and the chin on chest is as usual but is held straight up.

Fetal lie: The relationship of the long axis of the fetus to the long axis of the mother.
Fetal position: The relationship of the part of the fetus that presents in the pelvis to four quadrants of the maternal pelvis identified by initial L (left), R (right), A (anterior), and P (posterior).
Fetal presentation: The part of the fetus that first appears in the pelvis.
Flaccid paralysis: Weakening or loss of muscle tone.
Flat feet: Normal up to 6 months age. See ***Pes planus***.
Flexion: A movement that decreases the angle between two adjoining bones.
Footboard: A board placed at the foot so that the feet rest firmly against the board, the legs at right angles to it, to maintain proper positioning of the feet. Its purpose is to retain normal posture and prevent footdrop.
Frequency: The number of complete cycles per second (relative of a sound wave). Measured in Hertz (1 cycle = 1 Hz).
Functional: Affecting the functions but not the structure of an organ.
Fundoscope: See ***Ophthalmoscope***.
Fundus: The base or the deepest part of an organ; the portion farthest from the mouth of an organ, such as the fundus of the uterus or the fundus of an eye.

G

Gain: In hearing-aid terminology, gain is used in reference to an increase in the intensity of sound due to amplification.
Gait disorder: Abnormal manner of walking, due to neuromuscular, arthritic, or other body changes. The body's center of gravity may change.
Gait: Manner of walking, including rhythm, cadence, and speed.
Genetic: Pertaining to genetics or heredity.
Genetics: Science of heredity.
Genu valgum: Legs are curved inward so that the knees are close together, knocking as the person walks, with the ankles widely separated. Also called knock-knee.
Genu varum: Legs are bent outward at the knee. Also called bow leg.
Gifted child: A child with superior intelligence quotient. These children need special opportunities appropriate to their aptitude to utilize their intelligence for better performance.
Glaucoma: An abnormal condition of elevated pressure within an eye because of obstruction of the outflow of aqueous humor. Acute (angle closure, closed-angle, or narrow-angle) glaucoma occurs if the pupil in an eye with a narrow angle between the iris and cornea dilates markedly, causing the folded iris to block the exit of aqueous humor from the anterior chamber. Chronic (open-angle or wide-angle) glaucoma is much more common, often bilateral; it develops slowly and is genetically determined. The obstruction is believed to be within the canal of Schlemm.
Gonorrhoea: Sexually transmitted, affecting the genitourinary tract, pharynx, conjunctiva, or rectum. Infection results from contact with Neisseria gonorrhoeae.
Group therapy: Psychotherapy, group motivation, lactation management, thalassemia, leukemia, scholastic backwardness are the condition where group therapy in instituted.

H

Habit disorder: A tension discharging phenomena like head banging, body rocking, thumb sucking, nail biting, hair pulling, teeth grinding, stuttering.

Hair pulling: A habit disorder. See ***Trichotillomania***.
Head banging: A habit disorder, self damage, to frighten and punish parent. Mental retardation, brain damage children also indulge in head banging.
Headache: May be psycho somatic, malingering, attention seeking device.
Hearing aid: An electronic device that amplifies sound for people with impaired hearing.
Hearing level: Hearing level as recorded by pure tone threshold audiometry in dB; also called hearing threshold level (HTL).
Hearing: The special sense that enables sound to be perceived, hearing loss, mild impairment to complete deafness. See also ***Deafness***.
Hemiplegia: Paralysis of one side of the body.
Hereditary: Characteristic transmitted from parent to offspring.
Hertz (Hz): A unit measure of the frequency of sound, i.e., the number of complete cycles/second.
Hip dislocation congenital: Head of the femur does not articulate with the shallow acetabulum.
Hydrocephalous: Abnormal accumulation of cerebrospinal fluid within the cranial vault.
Hyper activity: Increased activity of entire organism or organ.
Hyperopia: Farsightedness, a condition resulting from an error of refraction in which rays of light entering the eye are brought into focus behind the retina.
Hypertelorism: Increased distance between inner canthi of both the eyes.
Hysteria: Tension or excitement in a person, temporary loss of control over the emotion.

I

Impedance: The degree of resistance offered by a given system to the flow of acoustic energy.
Implement: To do or put into action. Student goals and objectives are often implemented in the classroom by the support educator.
Inclusion: An educational philosophy aimed at "normalizing" special services for which students qualify. Inclusion involves an attempt to provide more of these special services by providing additional aids and support inside the regular classroom, rather than by pulling students out for isolated instruction. Inclusion involves the extension of general education curricula and goals to students receiving special services. Finally, inclusion involves shared responsibility, problem-solving, and mutual support among all the staff members who provide services to students.
Inclusive classroom: A classroom in which children with a diversity of learning needs and abilities share instructional space and all staff members who are responsible for providing support work together to benefit all the students in the class. A variety of services are provided and a variety of student needs are met inside the regular classroom.
Incomplete dislocation: Partial separation of articular surfaces of a joint. Also called subluxation.
Incontinence: Inability to control urine or stool.
Individual transition plan (ITP): A written plan of transition goals, objectives, or actions included in the IEP of special education students over the age of 14 or 16.
Individualized education program/plan (IEP): A written plan of educational goals and objectives for a student. This plan is reviewed and rewritten each year.
Infantile: Relating to infants or infancy.
Infestation: Presence of animal parasites.
Information input disorders: Learning disability, computer model, blocks in receiving information, visual, auditory, tactile, sensory.

Information out-put disorders: Learning disability, computer model, difficulty in written or spoken expression, learning by avoiding known difficulties.
Information processing disorders: Learning disability, computer model, inability to organize or process the information, sequencing problem.
Inherited: Genetically determined.
Intelligence quotient (IQ): Mental age divided by chronologic age multiplied by 100. Average IQ is considered to be 100.
Intelligence: The ability to acquire, retain, and apply experience, understanding, knowledge, reasoning, and judgement in coping with new experiences and in solving problems.
Internal ear: The complex inner structure of the ear, containing receptors for two different functions. The maculae and cristae cells help maintain equilibrium while the organ of Corti cells translate sound vibrations into impulses for the sense of hearing. The auditory receptor cells are innervated by the cochlear nerve. Also called inner ear, labyrinth. Compare external ear, middle ear.
Iritis: Inflammation of the iris**.**
Irrational expectations: A gap between expectations and achievement disturbs interpersonal relationship.

J

Joint capsule: Fibrous connective tissue envelope surrounding a joint.
Juvenile delinquency: Antisocial, illegal, or criminal behavior by children or adolescents.
Juvenile: Pertaining to a young person.

K

Karyotype: Photographs of chromosomes cut and pasted in descending order of size and according to the position of the centromere.
Kernicterus: Effect of high bilirubin on brain of a newborn.
Kilohertz (kHz): A unit of frequency equal to 1000 Hz.
Knee jerks: See ***Patellar reflex***.
Knock knees: See ***Genu valgum***.
Koch's spine: Tuberculosis of spine.
Kyphoscoliosis: Anteroposterior and lateral curvature of the spine.
Kyphosis: Convexity in the curvature of the thoracic spine as viewed from the side, caused by rickets or tuberculosis of the spine.

L

Lathyrism: A poisonous variety of lentils causes paralysis from lathyrism.
Learning disabilities: Normal intelligence, difficulty in learning, reading, writing, and numeric calculation.
Learning process: Acquiring knowledge or skill by means of study, practice or experience.
Leg length: Weaker leg grows slower and becomes shorter.
Lens: A curved, transparent piece of plastic or glass that is shaped, molded, or ground to refract light in a specific way, as in eyeglasses, microscopes, or cameras.
Leprosy: Caused by *mycobacterium leprae*. Tuberculoid leprosy, thickening of cutaneous and anesthetic skin lesions. Lepromatous leprosy, plaques and nodules in the skin, iritis, keratitis, destruction of nasal cartilage and bone. Blindness may result. Also known as Hansen's disease.

Ligament: Fibrous tissue binding joints, connecting bones and cartilages.
Limb: Extremity of the body, arm or leg.
Lip reading: Speech reading.
Lisping: Defective pronunciation of one or more of sibilant consonant sounds like s, h.
Locomotion: Movement from one place to another.
Locomotor: Pertaining to locomotion, moving from place to place.
Long-term memory: The ability to recall sensations, events, ideas and other information for long periods of time without apparent effort.
Lordosis: Anterior concavity if observed from the side.

M

Macula: A small pigmented area or a spot that appears separate or different from the surrounding tissue.
Magnetic resonance imaging (MRI): Medical imaging that uses radiation as its source of energy.
Malingering: Willful and deliberate feigning of the symptoms of a disease to gain some consciously desired end.
Meningitis: Infection or inflammation of the membranes covering the brain and spinal cord.
Mental age (MA): The age level at which one functions intellectually.
Mental disorder: Disturbance of emotional equilibrium, maladaptive behavior and impaired functioning.
Mental handicap: Mental defect, impaired intellectual functioning. Also known as mental retardation.
Mental retardation: Subaverage intelligence, impaired ability to learn and adapt socially.
Microcephaly: A congenital anomaly, small head, underdeveloped brain, some mental retardation.
Middle ear: The tympanic cavity and the auditory ossicles contained in an irregular space in the temporal bone. It is separated from the external ear by the tympanic membrane and from the inner ear by the oval window. The eustachian tube carries air from the posterior pharynx into the middle ear.
Milestones of development: Steps of development to be achieved as per age norms to enter into the next stage of development.
Mimic spasm: Involuntary, stereotyped movements of a small group of muscles, psychogenic, aggravated by stress or anxiety.
Modification: A change in what students do or a reshaping of the materials students use. Reducing the number of questions students must answer at the end of a textbook chapter, allowing a student to answer aloud instead of writing an answer, and allowing the student to do an activity that is different from what the other students are doing are all examples of modifications.
Mongolism: See ***Down's syndrome***.
Motor neuron: Efferent nerve cells that transmit nerve impulses from the brain to muscles.
Multidisciplinary health care scheme: A group of health care workers. Who are members of different disciplines each one providing different service to the patient. Persons with disabilities require a team of trained people to help them.
Multisensory teaching program: A teaching program that uses all sense at a time to give information to child's brain, e.g., flower, picture, smell, feel, bud, fruit, seed, plant.
Muscle: Fibers that contract, cause movement of the parts, striated muscle, smooth muscle.
Muscle relaxant: The drug that reduces the contractility of muscle fibers.
Mutation: Unusual change in genetic material. Genes are stable. Mutation is transmitted to future generations.
Muteness: Inability to speak.

Myelomeningocele: See ***Spina bifida***.

Myopia: A condition of nearsightedness caused by the elongation of the eyeball or by an error in refraction so that parallel rays are focused in front of the retina. Some kinds of myopia are: chronic myopia, curvature myopia, index myopia, and pathologic myopia.

N

Narrow band noise: Bandpass filtered noise where the central frequency coincides with that of the test tone. This sort of noise is used for masking in pure tone audiometry. It is an effective masker since it's energy is concentrated within the critical band for the specific test tone.

Natal: Pertaining to birth.

Nerve conduction test: Electrical test, integrity of the peripheral nerves, electric stimulator is placed over a nerve, time required for an impulse to travel the nerve is measured. Used in diagnosis of nerve entrapment syndrome, polyneuropathies.

Nerve deafness: See ***Sensorineural hearing loss***.

Nerve: Fibers that carry impulse to and from brain to other parts of the body.

Neurology: Science of the nervous system.

Neuroses: Mental disorder characterized by various anxiety symptoms.

Neurotransmitter: Chemicals that modify transmission of nerve impulses between synapses.

Non-organic hearing loss: A hearing loss which cannot be attributed to physiological causes. Sometimes associated with malingering or central deafness.

Nuclear scanning: Injected or ingested radioactive material, scanning for determining the size, shape, location, and function of various body parts.

Nyctalopia: Also called Night Blindness. Poor vision at night or in dim light, decreased synthesis of rhodopsin, vitamin A deficiency, retinal degeneration, or a congenital defect.

O

Occupational therapist: A special education-related service provider who works with students to improve the functioning or compensate for problems in fine motor functioning. Some of the areas OTs help with are grasping, holding, writing, and keyboarding.

Occupational disability: Worker unable to do job because of disease or accident related to his occupation.

Occupational therapy: Purposeful activity to help maximum independence in case of disabilities.

Ophthalmoscope: Advice for examining the interior of the eye. It includes a light, a mirror with a single hole through which the examiner may look, and a dial holding several lenses of varying strengths. The lenses are selected to allow clear visualization of the structures of the eye at any depth. If the patient or the examiner ordinarily requires extensive correction of a refractive error, the examination may require that the corrective lenses normally worn be worn for the examination.

Opposition: Thumb and other digits of the hand to grasp objects between thumb and fingers.

Optic atrophy: Wasting of the optic disc resulting from degeneration of fibers of the optic nerve and optic tract. In primary optic atrophy the disc is white and sharply margined, the central depression (physiologic cup) is enlarged, and the optic foramen of the sclera is clearly seen. In secondary atrophy the disc is gray, its margins are blurred, the depression is filled in, and the foramen is difficult to detect. Optic atrophy may be caused by a congenital defect, inflammation, occlusion of the central retinal artery or internal

carotid artery, alcohol, arsenic, lead, tobacco, or other toxic substances. Degeneration of the disc may accompany arteriosclerosis, diabetes, glaucoma, hydrocephalus, pernicious anemia, and various neurologic disorders.

Optic chiasm: A point near the thalamus and hypothalamus where portions of each optic nerve cross over.

Optic disc: The small blind spot on the surface of the retina, located about 3 mm to the nasal side of the macula. It is the only part of the retina that is insensitive to light. At its center the porus opticus marks the point of entrance of the central artery of the retina.

Optic foramen: An aperture in the root of the lesser wing of the sphenoid bone transmitting the optic nerve.

Optician: A person who grinds and fits eyeglasses and contact lenses by prescription. To become an optician, a person must graduate from high school and complete a 4- or 5-year apprenticeship. In some states licensure is required.

Optometry: The practice of testing the eyes for visual acuity, prescribing corrective lenses, and recommending eye exercises.

Orthotist: A person who designs, fabricates, and fits braces or other orthopedic appliances prescribed by physicians.

Osteogenesis imperfecta: Genetic disorder, autosomal dominant trait, defective development of the connective tissue, brittle and fragile bones, fractured by the slightest trauma. Also called brittle bones.

Osteomyelitis: Infection of bone and bone marrow, Staphylococci most common.

Osteopetrosis: Inherited disorder, autosomal recessive, increased bone density, obliteration of the bone marrow, severe anemia, deformities of the skull, compression of the cranial nerves, deafness, blindness, early death. A milder, benign form, autosomal dominant.

Otoscope: An instrument used to examine the external ear, the eardrum, and, through the eardrum, the ossicles of the middle ear. It consists of a light, a magnifying lens, and a device for insufflation.

P

Palmar crease: A normal groove across the palm of the hand.

Pandemic: Disease throughout the population of a country, or the world.

Papilledema: Swelling of the optic disc, visible on ophthalmoscopic examination of the fundus of the eye, caused by increased intracranial pressure. The meningeal sheaths that surround the optic nerves from the optic disc are continuous with the meninges of the brain; therefore increased intracranial pressure is transmitted forward from the brain to the optic disc in the eye to cause the swelling.

Paraffin bath: Application of heat to a specific area of the body through the use of paraffin. The part is quickly immersed in heated liquid wax and then withdrawn so that the wax solidifies to form an insulating layer. The procedure is repeated until the layer is 5 to 10 mm thick, and then the entire area is wrapped in paper towels. Used for arthritis and rheumatism or any joint condition.

Paraplegia: Paralysis with motor or sensory loss in the lower limbs and trunk.

Parathyroid gland: Four in number, attached to the thyroid gland secrete parathyroid hormone, helps blood calcium.

Patellar reflex: A sharp tap on the tendon just distal to the patella causes extension of the leg at the knee. The reflex is hyperactive in disease of the pyramidal tract above the level of the second lumbar vertebra. Also called knee-jerk reflex.

Peabody picture vocabulary test: Screening test, should not be relied upon for accuracy of diagnosis. Suggests problem areas to be looked into.

Perceptual problems: A disorder that interferes with the conscious mental recognition of sensory stimuli.
Perthes' disease: Destruction (Epiphyseal necrosis) of the cap or growth center on the head of the femur in children.
Pes planus: Flattening out of the arch of the foot. Also called flatfoot.
Pharmacokinetics: Action of drugs within the body.
Pharmacotherapy: The use of drugs to treat diseases.
Phobias: Anxiety disorder, obsessive, irrational, intense fear of specific objects.
Physical abuse: One or more episodes of aggressive behavior, usually resulting in physical injury.
Physical handicaps: Physical defect that interferes with normal functioning.
Physical therapist: A special education-related service provider who works with students to improve the functioning of large muscle groups, such as range of motion, walking, positioning, etc.
Physiotherapy: Treatment of disorders with physical agents and methods. Such as massage, manipulation, therapeutic exercise, cold, heat (including short-wave, microwave, ultrasonic diathermy) hydrotherapy, electric stimulation and light to assist in rehabilitating patients and restoring normal function after an illness or injury, also called physical therapy.
Pica: A craving to eat substances that are not food such as dirt, clay, chalk, glue, ice, starch or hair.
Pitch: The perceptual correlate of the frequency of and acoustic stimulus. Measured in units called mels.
Play therapy: A form of psychotherapy in which a child plays in protected and structured environment with games and toys provided by a therapist, who observes the behavior, affect and conversation of the child to gain insight into thoughts, feelings, and fantasies.
Polio vaccination: A vaccine prepared from poliovirus to confer immunity to it. TOPV, the trivalent live oral form of vaccine, is recommended for all children under 18 years of age. TOPV is called Sabin vaccine. First dose is given at birth. Three doses are given along with DPT or Triple injection at monthly interval. Booster OPV doses at one-and-a-half to 4 years. Pulse polio doses are given to all the children below 5 years of age on one day to give a pulse to the immunity.
Poliomyelitis: Infectious disease caused by one of the three polioviruses. Transmitted through fecal contamination. Asymptomatic infection, abortive poliomyelitis, nonparalytic poliomyelitis, paralytic poliomyelitis, spinal poliomyelitis, bulbar poliomyelitis.
Position: Posture of the body (anatomic position, lateral recumbent position, or semi-Fowler's position).
Pre vocational training: Training in basic work skills as required for a typical employment setting.
Presbyopia: Farsightedness resulting from a loss of elasticity of the lens of the eye. The condition commonly develops with advancing age.
Progressive: Disease signs/symptoms become more severe.
Prolonged gestation: Pregnancy that lasts longer than the usual time of 41 weeks delivery the birth of a child parturition.
Pronation: Assumption of a prone position, ventral surface of the body faces downward.
Prosthesis: Artificial replacement for a missing part of the body (artificial limb or total joint replacement, hearing aid, maxillofacial prosthesis, Starr-Edwards prosthesis.)
Psychology: Study of behavior and functions and process of mind. Types: analytic, animal, clinical, cognitive, experimental humanistic, social.
Psychopath: Person who has an antisocial personality disorder.
Psychoses: Mental disorder, gross impairment in reality testing.
Psychosocial assessment: An evaluation of a person's mental health, social status, and functional capacity within the community.
Psychosocial development: Normal serial development of trust, autonomy, identity, and intimacy.

Psychosocial: Pertaining to a combination of psychological and social factors.
Psychosomatic problems: Interaction of the mind and the body disorders.
Pull-out services: Special remedial, therapeutic, or enrichment services provided to students outside the regular classroom. In the past, almost all additional services were provided in this manner, regardless of individual student need. One aim of inclusion is to reduce the removal of students from the regular classroom when the same intent of service can be provided within the regular classroom.

Q

Quadriplegia: Paralysis of all the four limbs.

R

Reading disorders: Reading ability is below intellectual capacity. Tests show the problems does not involve mental retardation, chronological age or inadequate schooling, but is marked by faulty oral regarding, slow reading and reduced comprehension.
Refractive error: Defect in the ability of the lens of the eye to focus an image accurately, as occurs in near sightedness or for far sightedness.
Regression of milestones: Loss of function achieved by the child earlier. In malnutrition or certain diseases of the brain milestones might regress.
Rehabilitation center: A facility providing therapy and training for rehabilitation. The center may offer occupational therapy, physical therapy, vocational training, and special training, such as speech therapy.
Related service personnel: Special education personnel other than the special education teacher, including therapists, counselors, psychologists, and special instructors.
Remedial education: Educational plan designed to help retarded child (physical, mental social, or emotional development).
Remediation or remedial instruction: Instruction aimed at improving a skill or ability in a student or "catching a student up." Techniques for remedial instruction may include providing more practice or more explanation, repeating information, and devoting more time to working on the skill. A student having a low reading level could be given remediation through one-on-one reading instruction, phonic instruction, or practice in reading aloud.
Resource classroom: A special education service model in which students can be assigned for a certain amount of time (one hour a day, 30 minutes on Tuesday and Thursday, etc.) or come from other classes when support or instruction is needed.
Retina: A 10-layered, delicate, nervous tissue membrane of the eye, continuous with the optic nerve, that receives images of external objects and transmits visual impulses through the optic nerve to the brain. The retina is soft, semitransparent, and contains rhodopsin, which gives it a purple tint. The retina becomes clouded and opaque if exposed to direct sunlight. It develops from the embryonic optic cup in the eighth month of pregnancy and consists of the outer pigmented layer and the nine-layered retina proper. These nine layers, starting with the most internal, are the internal limiting membrane, the stratum opticum, the ganglion cell layer, the inner plexiform layer, the inner nuclear layer, the outer plexiform layer, the outer nuclear layer, the external limiting membrane, and the layer of rods and cones. The outer surface of the retina is in contact with the choroid; the inner surface with the vitreous body. The retina is thinner anteriorly, where it extends nearly as far as the ciliary body, and thicker posteriorly, except for a thin spot in the exact center of the posterior surface where focus is best. The nervous fibers end anteriorly in the jagged ora

serrata at the ciliary body, but the membrane of the retina extends over the back of the ciliary processes and the iris. See also ***Macula; Optic Disc***.

Retinitis pigmentosa: Hereditary, bilateral, degeneration of the retina, begins in childhood, blindness by middle-age. Night blindness, reduced visual fields, and pigmentation of the retina, macular degeneration, and eventually, total loss of vision.

Retinopathy: A noninflammatory eye disorder resulting from changes in the retinal blood vessels.

Retinoscopy: A procedure for examining the eyes for possible errors of refraction. The examiner shines a light into the eyeball and notes the movements of reflex from the fundus. This indicates the types of lenses needed to neutralize the refractive errors.

Rickets: Vitamin D deficiency, soft bones, bowlegs, knock-knees, enlargement at ends of the bones, large skull, chest deformities, spinal curvature, enlarged liver and spleen, sweating. Prophylaxis and treatment include a diet rich in calcium, phosphorus, and vitamin D and adequate exposure to sunlight.

Rubella: Viral, fever, cold, cough and a rash. Also called German measles.

S

School psychologist: A special education related service provider who works with students individually, provides small and large group counseling, and administers formal testing, and assessment.

Scissoring gait: A manner of walking cross-legged, as spastic paraplegia.

Scoliosis: Lateral curvature of the spine, a common abnormality of childhood.

Scurvy: Lack of ascorbic acid (vitamin C) in the diet. Weakness, anemia, edema, spongy gums, loose teeth, mucocutaneous hemorrhages, and induration of the muscles of the legs. Treatment is ascorbic acid, fresh vegetables and fruits.

Self-contained classroom: A special-education service model in which students receive all or most of their instruction or support from special education teachers and staff.

Sensorineural hearing loss: Sound conducted normally through the external and middle ear but a defect in the inner ear or auditory nerve results in hearing loss.

Sensory nerve: A nerve that conducts sensory impulses from the periphery of the body to the brain or spinal cord.

Separation anxiety disorder: In elementary grades; fear of school, oversensitivity, shyness, timid, nervous, emotionally immature, feeling of inadequacy. Becoming overdependent on the parents.

Sign language: Communication with deaf; hand and body movements. Many variations exist.

Slurred speech: Words are not clear or complete, but are run together.

Social behavior assessment scale: Information from others regarding a patient's functioning.

Social breakdown syndrome: Progressive deterioration of social and interpersonal skills in long-term psychiatric patients.

Social deviance: Behavior that violates social standards, anger, resentment, and a desire for punishment in a significant segment of the society.

Social mobility: The process of moving upward or downward in the social hierarchy.

Social motivation: An incentive or drive resulting from a sociocultural influence that initiates behavior toward a particular goal.

Social phobia: Anxiety disorder, avoidance of scrutiny by others, such as speaking, eating, or performing in public or using public lavatories or transportation.

Social readjustment rating scale: A scale of 43 common life-events that disrupt individual's life.

Social sanctions: The measures used by a society to enforce its rules of acceptable behavior.

Socioeconomic status: The social-economic position of an individual, considering education, income, occupation, residence, heritage, and religion.
Somnambulism: Sleep-walking.
Spasticity: Increased tone with weakness in a limb.
Special education: A federally mandated program organized through state and local educational agencies that ensures and provides appropriate educational opportunities for students qualifying under categories of disabilities.
Special educator: Special educator find right way of teaching a child that can not pursue the education in a normal way. Children with handicaps need their help.
Specific learning disability: Inability to learn in spite of normal intelligence. Information input, processing, output disorders, dyslexia, etc.
Speech center: A unilateral area in the posterior part of the inferior frontal gyrus and usually on the side opposite to the dominant hand.
Speech: Communication by spoken words.
Speech defects: Defect in pronunciation. Lisping, slurring, stuttering, cluttering.
Speech dysfunction: Abnormality of speech.
Speech pathology: Diagnosis and treatment of abnormalities of speech.
Speech reading: Speaker's lip, facial movements, with residual hearing, gestures body language are observed as a means of communication.
Speech synthesizer: Electronic apparatus with a keyboard that produces sounds that imitate the human voice.
Speech therapy: Correction of speech and language disorders.
Speech-language pathologist: A graduate in communication, its development, and disorders.
Spina bifida: Congenital developmental anomaly in the posterior vertebral arch. May be associated with meningocele or myelomeningocele.
Spinal cord: Structure lodged in the vertebral canal. The cord conducts sensory and motor impulses to and from the brain and controls many reflexes. The cord is an extension of the brain.
Spinal curvature: Deviation of the vertebral column from its normal position. Kinds of spinal curvature are kyphoscoliosis, kyphosis, lordosis, and scoliosis.
Squint (strabismus): Mal alignment of the eyes.
Stammering: Speech disorder, involuntary process in speech, spasmodic pauses, hesitations while speaking. Also called stuttering.
Stanford-binet test (SBT): Intelligence test.
Striated muscle: Tissue of all skeletal muscles.
Subacute: Less than acute.
Subluxation: Incomplete dislocation.
Supination: The palm of the hand turns up. Lying on the back, face up.
Support educators: Additional educational personnel hired to extend the services of a school's program. Support educators usually perform instructional, clerical, or student supervisory duties within a school or program. Other terms used to describe paraeducators include paraprofessionals, instructional aides, and classroom aides.
Support: To maintain or help a student by providing needed assistance in a variety of intensities and methods.
Sympathy: Showing interest in feelings of other person.

T

Temper tantrums: A conduct disorder, attention-seeking device.
Tendon: Band of tissue that attach muscle to bone. Tendons are extremely strong, flexible, and inelastic.
Thorpe developmental inventory (TDI): Screening test; should not be relied upon for accuracy of diagnosis. Suggests problem areas to be looked into.
Thumb sucking: Habit disorder; the habit of sucking the thumb for oral satisfaction. Normal in infants. In older children, may be indicative of some emotional problem.
Thyroid gland: In front of the neck, secretes thyroxin essential to normal body growth.
Tics: Repetitive movement of muscle groups. Tension releasing. Habit disorder.
Timbre: Sensation related to the quality of sound.
Tinnitus: Sensation of sound which arises in the head or ears of the sufferers.
TORCH syndrome: Infection of the fetus or newborn by one of the TORCH agents. Toxins are poison produced by plant or microorganism.
Toxoplasma: Toxoplasma gondii, an intracellular parasite of cats and other hosts that causes toxoplasmosis in humans.
Transition services: Services, training, skills, support, or instruction identified as necessary to help a special-education student successfully move from a school setting into a postsecondary setting (i.e., work, job training, technical school, college, military, independent living, semi-independent living).
Trichotillomania: Desire to pull out one's hair, seen in severe mental retardation.
Truancy: A habit of running away from school.
Trunk balance: The ability to maintain postural control of the trunk.
Tympanic membrane: A thin, semitransparent membrane in the middle ear that transmits sound vibrations to the internal ear by means of the auditory ossicles. It is nearly oval in form, with a vertical diameter of about 10 mm, and separates the tympanic cavity from the bottom of the external acoustic meatus. Also called eardrum, membrana tympani.
Tympanogram: The graphic representation of middle ear compliance under changing pressure conditions.

V

Vaccination: Injection administered to induce immunity and prevent diseases.
Virus: A minute parasitic microorganism. More than 200 viruses have been identified as capable of causing disease in humans.
Vision: The capacity for sight.
Visual accommodation: A process by which the eye adjusts and is able to focus, producing a sharp image at various, changing distances from the object seen. The convexity of the anterior surface of the lens may be increased or decreased by contraction or relaxation of the ciliary muscle. With increasing age the lens becomes harder and less flexible, resulting in a loss of accommodation, and, usually, of the ability to focus on nearby objects. Compare with ***Presbyopia***.
Visual acuity: The sharpness or clearness of vision.
Visual evoked potential (VEP): An evoked potential elicited by a repeatedly flashing light or a pattern stimulus. It may be used to confirm optic nerve or visual pathway damage.
Visual field defect: One or more spots or defects in the vision that move with the eye, unlike a floater. This fixed defect is usually caused by damage to the retina or visual pathways, such as by chorioretinitis,

traumatic injury, macular degeneration, glaucoma, or a vascular occlusion of the eye or the brain. Sudden loss of a noticeable portion of the visual field warrants ophthalmologic examination. Defects in the field of vision may be detected using an Amsler grid.

Visual handicap: Partial or total blindness, disturbed visual function.

Visual pathway: A pathway over which a visual sensation is transmitted from the retina to the brain. A pathway consists of an optic nerve, the fibers of an optic nerve traveling through or along the sides of the optic chiasm to the lateral geniculate body of the thalamus, and an optic tract terminating in an occipital lobe. Each optic nerve contains fibers from only one retina. The optic chiasm contains fibers from the nasal portions of the retinas of both eyes; these fibers cross to the opposite side of the brain at the optic chiasm. The fibers from the temporal portion of each eye bypass the optic chiasm and pass through the lateral geniculate body on the same side of the brain, and continue back to the occipital lobe. Thus the optic tracts, occipital lobe, lateral geniculate bodies of the thalamus, and optic chiasm each contain nerve fibers from both eyes. If the right optic tract were destroyed, a person would lose partial vision in both eyes—the right nasal and the left temporal fields of vision.

Visual perception: Understanding the visual sensory stimuli.

Visual-motor coordination: The ability to coordinate vision with the movements of the body or parts of the body.

Volkmann's contracture: A serious, persistent flexion contraction of forearm and hand caused by lack of blood supply.

Voluntary muscle: Striated muscle.

W

Wax therapy: Wax bath. See ***Paraffin bath***.

Wechsler intelligence scale for children (WISC): Intelligence test. A 10 Category test that gives both verbal and performance IQ.

Weight traction: Traction applied to a limb by means of a suspended weight.

White noise: Broadband noise in which acoustic energy is distributed at approximately equal amplitude across a wide range of frequencies (usually less than 6 kHz). Not a very effective masker in pure tone audiometry as the bandwidth is much wider than the critical band, hence there is much dispersion of energy.

Wide range achievement tests: Reports the grade level of achievement in reading, writing, spelling and mathematics.

Withdrawn behavior: A behavior pattern in which child does not like interact with others, engrossed in himself.

X

Xerophthalmia: Dry and lusterless corneas and conjunctival areas, vitamin A deficiency, night blindness.

(Compiled by Dr Anil Mokashi, Pune, and the Disability India Network)

About the Editors and Contributors

The Editors

Madhumita Puri is Secretary, Society for Child Development, New Delhi, and a practicing child psychologist. She obtained her Ph.D. from Delhi University in Psychology specializing in mental handicap and has been working in the area of disabilities for the last 20 years. Madhumita has been instrumental in establishing the well-known Disability India Network, an Internet portal. She has developed a series of workbooks for teaching Mathematics and English to children with mental handicap.

George Abraham is CEO, Score Foundation, and Chairman, Association for Cricket for the Blind in India, New Delhi. Visually Impaired from early infancy, he has been part of the mainstream right through. A postgraduate in Operations Research from St. Stephen's College, Delhi, he worked with Advertising and Sales Promotions Co., and Ogilvy Benson and Mather between 1982 and 1989. George has been working as a communications consultant since 1989, particularly with the blind. He has set up a regular National Cricket program for the blind and has organized two World Cups. Further, he has been conducting regular communication skills and personality development programs for the blind youth across the country. In addition, he has been regularly writing in the media on disability related issues including a column for the *Indian Express* on disability entitled "Talking from Within" in the mid-1990s, and another column for *The Asian Age* during the 2003 cricket World Cup in South Africa called "Heart Talk." Presently, George is working on "Project Eyeway," the first-ever comprehensive, one stop information center on the Eye and blindness.

The Contributors

Anjlee Agarwal is the Executive Director of *Samarthya*. It deals primarily with issues related to the access of persons with physical handicaps. She also promotes barrier free tourism.

Mythily Chari is a special educator, and the Founder Director of IRIS, a resource center for Autism and related disorders. She received her Masters and education specialist degree from the USA. She has been working in the field of disabilities since 1988 and is a member of the Rehabilitation Council of India. She offers direct consultation, training, and community supported rehabilitation for persons with Autism. She is an active advocate of inclusive education, early detection, and intervention for children with Autism.

Mallika Ganapathy is a consultant special educator with 15 years of experience. Her present areas of focus include inclusion and Autism. She is presently working as a Consultant for *Vidya Sagar* on a project of setting

up a model inclusive school in Tirumangalam, Madurai. She conducts short-term courses on Autism for specialists/parents and is a guest faculty for courses conducted by *Vidya Sagar*, RASA, SANKALP and other organizations. She is the Chennai Coordinator for the KidSmart Program launched by IBM and Promise Foundation, focusing on providing quality education for children from lower socioeconomic status families.

Sushil Goel is a psychologist. He received his doctorate in Psychology from the Delhi University and is currently working with NCERT, Bhopal.

Lakshmi Krishnakumar is a special educator and the Co-Founder and Director of SANKALP. Working for the last 13 years with children with learning disability and slow learners.

Sandhya Limaye is a faculty member at the Tata Institute of Social Sciences, Mumbai. She worked on perspectives related to the inclusion of hearing impaired children in mainstream schools for her doctoral work.

Shruti Pandey is a lawyer with special interest in issues relating to disability law and other human rights law issues. She is associated with the Human Rights Law Network (HRLN). She also writes on these issues, is the Senior Assistant Editor of *Combat Law*, a human rights magazine, and conducts trainings on disability law.

Indumathi Rao is the Director of the CBR Network, Bangalore. This organization works extensively with the school system in the rural areas of Karnataka.

Reena Sen is a well-known educationist. She has worked in the Indian Institute of Cerebral Palsy since 1975. She is a trained teacher with a B.Ed from Calcutta University. She has a Ph.D. from the Institute of Education, University of London, in the area of literacy, learning, and specific reading and writing difficulties. She heads the Institute's Department of Special Education and has worked extensively with NGOs in the development and disability sector in the East and Northeast.

Renu Singh is the Director, School of Rehabilitation Sciences, Action for Abilities, Development and Inclusion, formerly known as the Spastic Society of Northern India.

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