
Language Shock – Dyslexia across cultures

A Multimedia Training Pack
for learners, parents and teachers

Guide – BBC video – Web site



Dyslexia International – Tools and Technologies

Dyslexia International – Tools and Technologies (D-I-T-T) is a non-governmental, non-profit making organisation, open to learners, parents, teachers, medical professionals and all who promote the interests of children with learning difficulties.

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The Web site that gives up-to-date listing of resources and contacts given in this *Multimedia Training Pack* is to be found at: www.ditt-online.org

Language Shock – Dyslexia across cultures

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– Resources and Contacts

– Information from European Union Member States

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Preface

*Jackie Stewart, OBE, Chairman of Stewart Grand Prix –
three times Grand Prix Formula One champion*

Never before have people moved around Europe so much or so often – for their work, or an improved quality of life.

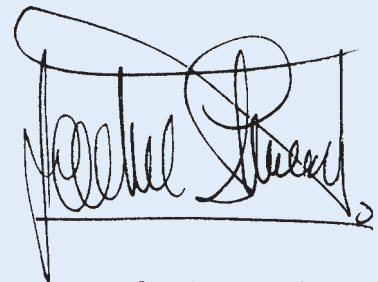
But it can be costly – particularly for children who have a learning disability called dyslexia.

For them, it may be impossible ever to capture that new language, because it's difficult to comprehend information in the traditional ways normally used within the educational system.

Dyslexia can be extraordinarily damaging to a young person – totally frustrating – and it can wreck lives.

I am a dyslexic. I've managed to survive in life because I've been able to get around the problem. It has never stopped me doing the things I wanted to do.

And for young dyslexics – with the right help – they too can go far. And perhaps faster than other folks....

A handwritten signature in black ink, appearing to read 'Jackie Stewart', written in a cursive style. The signature is enclosed within a rectangular box that has been drawn over it.

Jackie Stewart, OBE

Foreword

As one involved daily in administering the education of children in multilingual environments in several European countries, I am keenly interested in this *Multimedia Training Pack*. The European Schools which I help to run are unique in several respects – set up by intergovernmental statute, following a common curriculum, awarding the European Baccalaureate – but they share some characteristics with any school where children are educated away from their home countries. Such schools frequently offer an academic education aiming to equip pupils for higher education. They often provide a rich variety of languages.

For most children, living abroad, and experiencing a multilingual education, is challenging but ultimately rewarding. It can become a nightmare for some children with learning difficulties and for their parents unless timely specialist support is available – but therein lies a problem.

The schools may exist in a pedagogic vacuum, removed from sources of support and teacher training available in many Member States of the European Union. Procedures for diagnosing children's learning difficulties may be undeveloped.

Inevitably there are casualties: children for whom the demands of learning an extra language may compound problems in their mother tongue; children who find it difficult to cope, who fail one or more years, or even drop out completely. The human cost to the children and their families can be great.

For all those reasons I welcome this initiative in helping both to raise awareness of language learning difficulties and to improve access to local and national sources of information for teachers and parents. The *Multimedia Training Pack* has the potential to make a powerful contribution to the in-service training of teachers. Congratulations to all the parents, teachers and pupils who have worked to produce the *Multimedia Training Pack*, thereby using their own experience to create opportunities for future generations of children.

Peter Irvine
Deputy-Representative
Board of Governors
of the European Schools

Dyslexia International – Tools and Technologies

building learning abilities

Patron:

Her Royal Highness Princess Margaretha of Liechtenstein

As more families move within the European Union, more children with specific learning difficulties/dyslexia are in need of a supportive education if they are to realise their potential. Their parents cannot always afford expensive private schools, language barriers can make integration into local schools impossible, and the national education system in their own countries cannot provide for them when they are no longer resident.

D·I·T·T aims to bring full awareness of the problems associated with specific learning difficulties/dyslexia into the education systems of all EU Member States and beyond, and to improve the remedial help by making effective assessment and training available to all.

This *Multimedia Training Pack* – guide, BBC video and Web site – was originally published by European Children in Crisis (ECIC) in 1998. Members of ECIC who devised this project have now established D·I·T·T as a separate organisation to handle all matters to do with the Pack. It is designed to raise awareness of children with dyslexia/specific learning difficulties whose families may be moving from one country to another and who are faced with the challenge of having to learn a new language. It aims to help teachers, parents, and all those concerned to work together to improve the quality of these children's education and opportunities.

**This Multimedia Training Pack is an essential tool
for induction and in-service training for all teachers
in multilingual, multicultural schools**

What is Dyslexia?

*Harry T. Chasty, B.Sc, M.Sc (Psychology), Ph.D, F.R.S.A,
International Consultant on Learning Abilities and Difficulties*

'Dyslexia means a difficulty with language – words and letters – so that the most obvious and persistent difficulties you will see will be with reading and writing, and very intractable difficulties with spelling, also with memory, especially sequences such as days of the week and months of the year: memory will be poor; personal organisation will be poor in almost every circumstance.'

(Video: Dr Steve Chinn)

Dr Harry Chasty was invited to be Co-ordinator at the 1994 Consultative Conference, Action for Dyslexia, held in Brussels. The Ministries of Education from the then twelve Member States were invited to send delegates. The Conference was chaired by Robin Salter, President of the European Dyslexia Association.

In this article, Dr Chasty defines dyslexia from an anglophone perspective.

Introduction

In 1970, Dr McDonald Critchley, Chairman of the World Federation of Neurologists, defined dyslexia as 'a disorder manifested by a difficulty in learning to read, despite conventional instruction, adequate intelligence and socio-cultural opportunity, which is dependent upon fundamental cognitive difficulties which are frequently of constitutional character.'

Since then research into this learning difficulty has grown rapidly, tending to concentrate upon the 'fundamental cognitive difficulties' which Critchley referred to but did not specify. Those involved in the research process often tend to take a single-minded or rather limited perspective and regard their area of the subject as the key aspect. Parents and practitioners coming fresh to the field should take a broad view, which encompasses all the major aspects of research. This should lead to a more effective understanding of the range of difficulties experienced by dyslexic children, and how these should be managed in forwarding the child's education.

When talking about dyslexia to parents, I often use the analogy that dyslexia is a funny animal rather like an elephant. When examining it by touch to discover what it is, if we grasp it by the tip of its trunk, the picture we construct in our mind is very different from the picture we might construct if we grasped it by a tusk, a foot or an ear. In constructing the picture of the whole dyslexia 'animal,' it is essential to take the broader perspective which includes all the factors identified in the research.

Key elements from the research picture

Early research by Pringle-Morgan, Hinshelwood and Orton looked at the **visual and motor**/muscle movement deficiencies in the child's reading. More recently Burt and Schonell, while not using the word dyslexia, wrote about reading 'backwardness' related to the deficiencies in these

aspects of the child's learning to read.

Marion Annett and Georgina Rippon have been researching this area of brain function in relation to reading difficulty.

Research into the failure to understand the recurring regularities in the sound patterns of our language, leading to the **phonological** difficulties experienced by dyslexic readers, is prestigious and popular with the psychological 'establishment.' Vellutino, Bryant, Bradley, Frith, Snowling, Hulme and Hatcher are some of the key workers in this area. Hatcher's phonological training programme, 'Sound Linkage' is effective and popular.

Dyslexic children are noticeably forgetful, and this significantly affects their learning and everyday skills. There are three routes through short-term working memory into learning: through hand and motor memory, through eye and visual memory and through ear and auditory or phonological memory. Difficulty in the operation of short-term or **working memory** systems in dyslexic children has been researched by Alan Baddeley, Sue Gathercole, Graham Hitch and others.

Over some 30 years, **neurological research** of vital significance has emerged from Harvard Medical School. This work was initiated by Norman Geschwind in the 1960s. Geschwind identified areas of the brain necessary for language specialism which are of great significance in learning to read. He discovered that there were differences in the cerebral asymmetry of individual learners, some of whom did not show the usual left hemisphere specialism for language. This difference in neurological organisation made them less efficient in learning language and reading skills. Under the Orton Dyslexia Society brain research project, these ideas were taken forward by Albert Galaburda, who concluded that in dyslexic learners there was a 'uniform absence of left-right asymmetry in the language area of the brain.' The changes he observed were associated with qualitatively different patterns of cell connections forming the 'architecture' of the brain. He advised that dyslexics should not be regarded as having a learning difficulty, rather a different kind of learning ability, and he gave some understanding of the creativity often shown by dyslexics. More recently, Rosen and Sherman have refined this work, identifying areas of the brain where different cell structures, leading to inefficiency in learning, are observed in dyslexics.

...dyslexics should not be regarded as having a learning difficulty, rather a different kind of learning ability...

In Europe, Dirk Bakker also researched the failure of dyslexic learners to establish the normal left-right 'functional asymmetry' of the brain. He pointed out that in learning to read, at one stage, right hemisphere visual processing of words as shapes was necessary. At a later stage, the processing of sound symbols in the left hemisphere was necessary. Children who had not developed appropriate 'functional asymmetry' may use either right hemisphere visual or left hemisphere verbal/phonological strategies inflexibly and ineffectively in reading. Bakker developed a training programme to facilitate more efficient use of appropriate strategies.

Speed of information processing is also affected. Further work by Livingstone, in association with the Harvard neurological research team, established that the neuro-anatomical abnormalities (nerve-structure) observed in the magnocellular pathway which links the eye to the visual cortex resulted in the dyslexic learner processing slowly presented visual information adequately, but fast visual information significantly less effectively. Tallal showed similar inefficiency was present in the auditory information processing system. Neurological reasons are now apparent for the auditory and visual perceptual difficulties shown by dyslexics and their generally slower speed of working in class.

Parents have always been aware that their dyslexic children experienced difficulties in learning to read that are similar to those they themselves had experienced when they were in school. Dyslexia appeared to be a **genetic** problem. Research by Lubs highlighted chromosome 6, while later work by Smith indicated chromosome 15 as the problem area. Dyslexia therefore runs in families and is not limited by bounds of class, creed or nationality. It leads to inefficiency in learning in children in all the education systems of the Member States of the European Union. Its educational effects can be made significantly worse by a family's mobility, resulting in **bilingual** or multilingual experience and instability in education, which are often necessary facts of life.

Specific learning difficulties/dyslexia are **developmental**, because the observed nature of the difficulty changes as children get older. At the early age of 18 months children may show difficulties in establishing motor control in walking. At 24 months the onset of speech may be observed to be very slow. At age three years, some clumsiness may still be evident, and difficulty observed in making some speech sounds or in sequencing the sounds into the correct order to pronounce longer multi-syllabic words. At six years children may show difficulty in recalling and recognising words while reading. When concentrating on word recognition they may have difficulty in retaining the meaning of the story, and so may have to read it two or three times to obtain the sense that other children achieve at first reading. Naturally in these circumstances dyslexic children are less likely to read stories for pleasure and do not develop fluency in reading.

The motor difficulties considered earlier may limit control of the pencil in writing and may result in memory difficulties of shapes and sounds leading to weakness in representing words on paper through spelling. The written expression of ideas is often inhibited, restricted and so error prone that it is difficult to understand what is in the child's mind. The writing of the dyslexic student does not adequately convey the underlying knowledge or thinking, but all too frequently teachers and colleagues tend to judge the dyslexic child by what has been written on paper.

While the ability to recognise words often improves greatly in the later stages of the education process, reading comprehension, written expression and the underlying

'It was very frustrating. I couldn't seem to read a sentence properly – I couldn't comprehend it.'

(Video: Elena del Arbol)

The writing of the dyslexic student does not adequately convey the underlying knowledge or thinking, but all too frequently teachers and colleagues tend to judge the dyslexic child by what has been written on paper.

planning and organisation necessary for successful study may remain as serious difficulties.

The curriculum problems of dyslexic students are not restricted solely to literacy. There may be underlying cognitive difficulties in managing the rather different language of **number**. Some 70% of dyslexic learners have difficulty with oral and written calculations and mathematical thinking. The work of Steve Chinn in the UK and Mahesh Sharma in the USA has established appropriate teaching procedures using structured multi-sensory methods to enable dyslexics to develop more effective numeracy/mathematical skills.

Dyslexic students are frequently depressed by their failures and self-conscious about their difficulties in class. They may find the classroom a very stressful environment and if they do not receive the consideration and special teaching they need, can become disturbed and show difficulties in **behaviour** which add to their learning problems.

In describing the developmental effects of dyslexia, there is a risk that an anxious parent may use the descriptions above as a check list, counting the number of factors their child exhibits. It must be stressed that while some children may show all the points discussed above, others will not. Mildly affected students may show only one or two of the difficulties I have referred to but still be coping adequately and efficiently with their school curriculum. There is no simple or easy guide to the severity of a student's dyslexic difficulties, nor to when a student will experience failure, which is implicit in dyslexia.

It is my opinion that there are different **types of dyslexia**, auditory-phonological (to do with hearing and sound), visual-motor (to do with sight and movement) and a combination of both. I share the view of many experts that in providing appropriate special help for a dyslexic student, it is vital to take account of the underlying cognitive difficulties which give rise to their special needs.

In 1994 the Department for Education in the UK issued a detailed guide to the assessment and management of special needs, including dyslexia, entitled *Code of Practice*. Under the heading 'Specific Learning Difficulties (for example Dyslexia),' at paragraph 3.60, a very useful description is given:

'Some children may have significant difficulties in reading, writing, spelling or manipulating numbers, which are not typical of their general level of performance. They may gain skills in some subjects quickly and demonstrate a high level of ability orally, yet may encounter sustained difficulty in gaining literacy or numeracy skills. Such children can become severely frustrated and may also have emotional and/or behavioural difficulties.'

Advice is given at paragraph 3.62 (iii) that in identifying the nature of the child's difficulties, local education authorities should seek evidence of the underlying cognitive difficulties referred to above: 'clumsiness, significant difficulties in sequencing or visual perception, deficiencies in working memory or significant delays in language functioning.'

'Dyslexia is not an illness but it is a handicap. It is a learning difficulty which makes all aspects of dealing with language, especially written language, very much harder. It is now known to be a genetic condition which dyslexic learners inherit from previous generations of their family'
(Video commentary)

This is very close to the description of specific learning difficulties/dyslexia which I offered to the British Dyslexia Association's 'Meeting Points' Conference in 1989, which was later published in a paper entitled 'Meeting the Challenge of Specific Learning Difficulties' in *Children's Difficulties in Reading, Writing and Spelling* by Pumfrey and Elliott: 'Specific learning difficulties/dyslexia are organising or learning difficulties which restrict the student's competencies in information processing, in fine motor control and working memory, so causing limitations in some or all of speech, reading, spelling, writing, essay writing, numeracy and behaviour.' This definition was accepted as an appropriate base for further research and development by the group representing all Member States, which met as 'Action for Dyslexia' at the European Parliament in 1994.

The response must be a full and detailed assessment to enable the identification of the dyslexic student's abilities and difficulties in learning, information processing skills in fine motor control, auditory, visual and motor short-term memory, visual perceptual and phonological capabilities and attainments in the basic curriculum skills of speech, reading, spelling, writing, numeracy and social and behavioural competencies, so that a full and effective programme can be drafted in an individual plan drawn up for the child and implemented by a specialised, trained teacher.

The 30-minute **training video** which forms part of this *Multimedia Pack* aims to increase awareness in parents and teachers of the implications of dyslexia and the actions that need to be taken on behalf of dyslexic children. These are children who can learn and do learn, but learn differently. If dyslexic children do not learn the way you teach, can you teach them the way they learn? Can you then develop their learning competencies to help them find the way to appropriately effective literacy and numeracy skills, so that these children are enabled to make a full contribution to the welfare of the nation and the European Union as a whole?

If dyslexic children do not learn the way you teach, can you teach them the way they learn?

The Brain and Dyslexia

*Professor Dr Dirk Bakker, Ph.D,
Professor-Emeritus, Free University, Amsterdam;
Director, European Graduate School of Child Neuropsychology*

This is a shortened version of the original text by Dirk J. Bakker: 'Dokteren aan dyslexie' – from E. van Aarle & K. Henneman (Eds.), Dyslexie '92 (pp.159-170); Amsterdam/Lisse, Netherlands: Swets & Zeitlinger, 1993. All references are listed in the original version. Translation by Peter Arthern, OBE.

Introduction

In talking about dyslexia we are also talking about the process of reading. Reading is cognitive behaviour and is therefore carried out by the brain. So when we talk about reading, then we must also be talking about something to do with the brain.

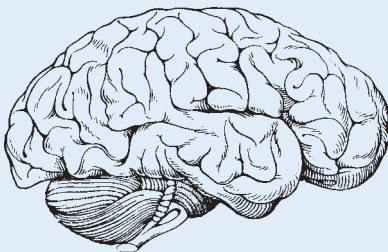
But what is this something? Recently a substantial amount of attention has been given to what the brains of dyslexic people look like and how they function.

What follows is a survey of the scientific approach to dyslexia based on my own knowledge to date. This is a huge task in a limited space and I have tailored this article to convey the kind of information that readers of this Guide might find useful.

If we use the brain as our starting point, we are faced with such questions as:

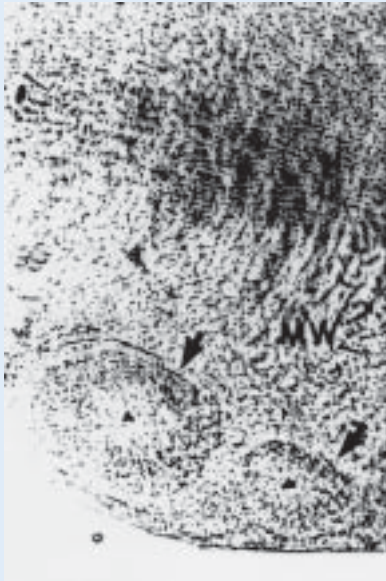
- 1 What is special about dyslexics' brains?
- 2 What is the origin of this special feature?
- 3 How does this special feature manifest itself?
- 4 What intervention is appropriate?

The Brain



The right cerebral hemisphere

The brain is made up of billions of nerve cells, or neurons, which communicate with each other along an electro-chemical path. Although the brain operates as a single entity, there are substructures and subsystems. It is divided into left and right hemispheres which are connected by the 'corpus callosum.' In most people the left side is responsible for the reception and production of language, while the right hemisphere plays an important part in visio-spatial (vision and the assessment of spatial) information. Each hemisphere has a cortex or bark with a white substance below it. The cortex contains mainly the body of the nerve cells; the white substance contains the connections.



Ectopias (indicated by arrows)

The cells in the cortex move from deeper areas of the cortex during development prior to birth. Not all the cells may reach their final destination; they may collect into clusters of cells along the way. These 'misplaced' groups of cells are called **ectopias**.

The cortex of each hemisphere is divided into four functional areas: the frontal, parietal, temporal and occipital lobes. All these areas are involved in the complex activity of reading, particularly the temporal and occipital areas and the transition area between the two, the parietal lobe.

Nerve cells communicate with each other electro-chemically. This electrical activity can be measured outside the brain by means of an electroencephalogram (EEG) and techniques derived from it.

Question 1:

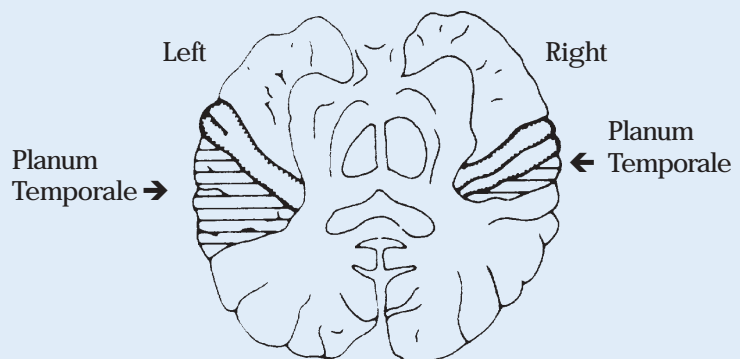
What is special about dyslexics' brains?

In spite of extensive scientific research, here there are still more questions than answers. Recent research has thrown some light on the subject, but it is important to make a distinction between answers relating to the structure, or anatomy, of the brain and those relating to its physiology, or functioning.

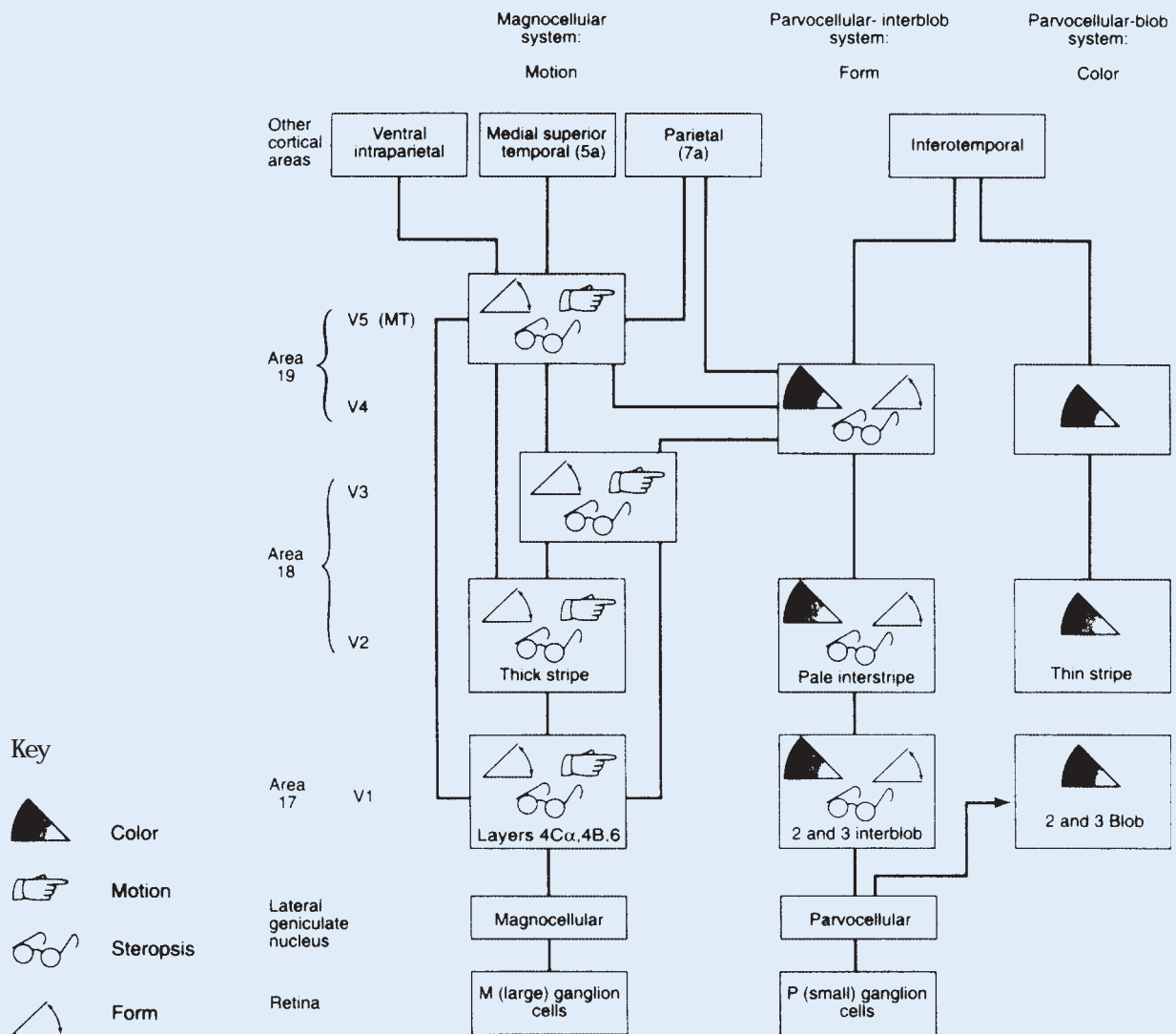
Question 1.1: Anatomically special?

What is anatomically special about the dyslexic's brain?

- Ectopic cells were found in all the dyslexics' brains examined during the Harvard University anatomical research programme. They were found in many places, but especially in the left temporal and frontal lobes, that is in the areas important for language.



Planum temporale (non-dyslexic subjects)



Parvocellular and magnocellular systems
 from: E.R. Kandel, J.H. Schwartz and T.M. Jessel,
 Principles of Neural Science, 1991, Elsevier Press, New York, U.S.A.

- Other researchers have shown that the 'planum temporale' tissue shows a symmetry in dyslexics' brains which is not evident in the brains of the majority of non-dyslexics.
- In dyslexics' brains, the cells of the magnocellular system appear smaller than normal. It looks as if two main systems are involved in visual perception, the magnocellular and the parvocellular system. The parvocellular system is adapted for the perception of form and colour and the magnocellular for the perception of movement. The magnocellular system plays a prominent role in the rapid changes of images which are peculiar to reading. If this system proves inadequate, difficulties with reading will result.

This summary of anatomical discoveries gives rise to two questions and comments:

Has it been shown that dyslexia is caused by subtle anatomical deviations in the brain?

A causal connection has *not* been shown. It is known that the dislocation of cells occurs in several neurological conditions and that such misplacement of cells is not specific to dyslexia. This, however, does not alter the fact that some researchers consistently showed that dyslexia bears some relation to subtle deviations of the brain in areas which are prominent in the process of learning language and reading.

What do the ectopic or misplaced cells have to do with a specially large right-sided planum temporale, and what does this have to do with an insufficient magnocellular system?

These questions are the subject of on-going research.

Question 1.2: Physiologically special?

Neurophysiology and neuropsychology make much use of the electroencephalogram (EEG) and techniques derived from it. In addition, Positron Emission Tomography (PET) scans are used: glucose or another chemical is introduced into the bloodstream while a particular task is being carried out; the chemical introduced, which is made radioactive very briefly, is taken up more intensively by those parts of the brain which are most closely connected with reading.

Frequently these scans are used to examine people manifesting symptoms of dyslexia. Modern technology makes it possible to show a full representation of the electrophysiological activity of the whole cortex while the subject is reading. This type of research into normal and deviant reading is currently under way in the Netherlands. Using electrophysiology on people with differing reading skills has shown that

- the beginner demonstrates activity in the right hemisphere of the brain whilst reading
- the advanced reader activates the left hemisphere, and
- the dyslexic shows an unusual variation in the distribution of brain activity.

One theory suggests that there is a dynamic interactive neuronal model for the recognition of letters and words. The essential characteristics of a letter are picked up by nerve cells in the brain. For example, 'line from bottom left to top right, line from bottom right to top left.' On the basis of this information, signalled through other cells, the recognition of the letter 'A' takes place. The scanning of a letter's characteristics and the identification of the letter itself are presented as electric potentials which have a certain frequency and amplitude and which are extinguished after a certain time. If the letters are presented rapidly, as in the case

of reading, it could be that the processing of one letter is not finished before that of another is started. It can be determined mathematically that the potentials can reach chaotic proportions, can extinguish each other, and letters could be missed when reading. These problems happen frequently to people with dyslexia. One explanation for this electro-physiological chaos could be that there are insufficient good cells in the right place to assimilate a large amount of information properly.

From this we can see that the question as to what makes dyslexics' brains special is as yet inconclusive.

Question 2: **What is the origin of this special feature?**

If there is something special about dyslexics' brains, what is the origin of this speciality?

Here a distinction should be made between possible internal, i.e. relating to the body, and external or environmental issues.

Internal causes

It has been suggested that too much testosterone in the unborn child, or too great a sensitivity to it, could be responsible for the formation of ectopic cells and the characteristic size of the planum temporale in the brains of dyslexics. Testosterone would have a negative effect both on the auto-immune system and on brain growth, particularly of the left hemisphere. In the New Zealand black mouse, an animal which is born with a defective immune system, ectopic cells are indeed found in the brain. It is possible that there is a connection between illnesses which are based on defects in the auto-immune system, such as allergies, asthma, diabetes etc, and dyslexia. But if there is a connection between the auto-immune system, the occurrence of ectopic cells and dyslexia, it is not yet fully understood.

In conclusion, it is possible that there is a connection between how the auto-immune system works and the occurrence of ectopic cells, and perhaps even between these two and dyslexia.

External causes

The quality of the brain is not dictated solely by the genes. The environment can improve or detract from the structure and function of the brain. When we talk about the environment, we mean the physical-chemical, physiological, psychological and social surroundings. The womb is the early environment for the child, and the family and school are learning environments, and it is known that they produce significant effects on the brain. It is quite possible that deviations in the structure and function of the brain are caused not so much by defective genes as by negative influences exerted by the environment on the brain.

The deviant symmetry of the planum temporale may be caused in the later stages of pregnancy and the early stages of childhood. During these phases of a child's life there is usually a drastic selection among nerve cells. Millions of cells die off while those remaining grow to maturity. This may perhaps be due to an external reason. We know that environmental factors, including factors within the womb, act on a range of nerve structures.

The environment, particularly certain learning situations, can however produce positive effects, and therapeutic use can be made of this.

Question 3: How does this special feature manifest itself?

Scientific research has changed its focus on the manifestations of dyslexia over the years. About thirty years ago, attention was paid in particular to sight and motor variables which were thought to be connected with dyslexia. Some time later extensive research was carried out into so-called inter-sensory integration: if a word is to be read out loud, is it first seen visually and then spoken aloud? The question was whether dyslexic children have special difficulty with visuo-auditory integration. Because written words are ordered in space and spoken letters are ordered in time, the spatial-temporal integration was also examined. Later the view was adopted that the central problem with dyslexia is the processing of verbal information; it is not important in this connection whether the information is arranged in space or time.

Currently attention seems to be focused on the relationship between spoken and written language. Questions are directed to the nature and quality of phoneme-grapheme analysis of the script and the automation of the phonetic and orthographic coupling.

In considering current ideas on language awareness, it is even possible to say that nowadays we have 'left language behind.' What do we mean by language awareness? Take the word 'motorway.' A dyslexic person can pronounce such a word as well as anyone else but, with a little thought, the non-dyslexic is aware that the one word consists of two recognisable groups of letters, 'way' and 'motor.' The question is whether the dyslexic learner also possesses such an awareness of language.

Other questions go unanswered. For example: Do dyslexics understand the message of the text correctly? Do they understand what they read? Do all dyslexics face the same problems here or are there dyslexics and dyslexics? In other words, is dyslexia a homogeneous or heterogeneous phenomenon?

In my own view, there are different types of dyslexia, and they require different types of treatment.

Behaviour manifested with dyslexia

Behaviour manifested with dyslexia in the earlier and later stages

Research tells us that dyslexia can be accompanied by social and emotional problems. Dyslexia and learning difficulties in general can lead to emotional insecurity and social isolation. It is a good idea to define these concepts, for example, by asking such questions as: How many friends do they have? What are their career prospects? What kind of mood do they generally exhibit? If they have physical complaints: How many are there? How do they perform in further education?

Question 4: What intervention is appropriate?

Before a treatment can be called a treatment, it must be proved that it produces positive effects. The positive effects of a treatment must be clearly indicated and its limitations recorded. If, after a treatment is used for the first time, a child shows improvement in reading and spelling, this does not necessarily mean that the treatment has worked. A great deal of research is necessary before a treatment can be called a treatment.

The nature of treatment, intervention and prevention will be determined to an important extent by the theory and research to date. For example, if it were proved that testosterone had a role, during the prenatal period, in causing dyslexia, prevention would be the course to take.

When one intervenes with the treatment at the level of the brain, given that it can actually be done, there are several ways of proceeding. If, for example, we have developed and tested a model based on the relationship between the reading and learning processes on the one hand and control by the hemispheres on the other hand, we can – using our knowledge that brains are sensitive to stimulation – try to involve the other hemisphere more in the reading and learning processes.

In schools where children with dyslexia are taught, it seems that the teachers who work most competently are those who are open-minded to new scientific research. As more students with special educational needs are being accommodated in mainstream schools, teachers are working in accordance with policies on integration. In my opinion, the following steps should be taken to make this integration successful:

- Educationalists in regular or special education should be made more aware of, and become better acquainted with, research into learning disability and dyslexia. They must be able to recognise a case of dyslexia and know how to refer it. This should be the case for teachers in primary, secondary and higher education.

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- In each school or group of schools there should be a specialist, such as an educational psychologist, who is responsible for diagnosing dyslexia, stating what type it is, and treating it. This requires extensive knowledge and specific skills. The specialist must be able to evaluate the findings critically and communicate them. He or she must be able to distinguish what has been proved from half-truths, and must also be able to pass on information horizontally to the class teacher and communicate vertically with a specialist scientific body or institution where the latest research findings will be available. Cases could be discussed at this institution and difficult cases could be referred there for treatment. He or she should also be familiar with other approaches, including those that rely on more than one type of know-how and treatment.

If this model were followed, a direct line of contact would be established between the educationalist in the school right through to the specialist scientific institution. The specialised member of staff in the school, who would liase with the outside specialised scientific institution, should be an educational psychologist specialised in the subject or a qualified special-education teacher.

Alternatively, the school could choose a specialist from outside, for example from a specialised team based in the local education authority. The school-based teachers could then act with the specialised team and contact could be maintained with the scientific institution to keep up-to-date with the latest research, consult, and make referrals.

Bilingualism and Specific Learning Difficulties

Professor Dr Ludo Beheydt, Professor of Dutch Linguistics, Université Catholique de Louvain, Louvain-la-Neuve, Belgium

*Professor Beheydt looks at how learning a new language affects the child with specific learning difficulties, the processes involved and the necessity for parents to fully understand the burden this can place on some children where bilingualism is introduced through **immersion education**.*

Some dyslexic students can and do learn a second or third language successfully, at least within limitations. But this is best achieved with the help of qualified teachers using appropriate structured teaching strategies adapted to each child's individual learning style.

Definition

'We are now already living in a multilingual society. Already in Europe you need more than one language to survive as more people are moving – changing place – which means changing languages.'

(Video: Professor Dr Ludo Beheydt)

Bilingualism is not an absolute concept. The perfect bilingual who has a native-like control of two languages hardly exists. It seems safer to look at bilingualism as a continuum using the working definition: 'the ability to communicate in two languages with a certain amount of ease in all usual situations.' It goes without saying that these situations will be more demanding linguistically for adults than for children and that an adult bilingual will be expected to have a greater proficiency in the two languages than a child. It may be also be useful to distinguish between bilingualism as 'basic interpersonal communicative skills' (BICS, Cummins) and bilingualism as the 'cognitive academic language proficiency' (CALP, Cummins) necessary to express abstract ideas adequately.

Bilingualism, and more specifically early bilingualism, is generally viewed as an advantage to children. In Europe it is increasingly seen as a social necessity that should be encouraged from birth. The need to acquire a second language so as to be better equipped to face the challenges thrown up by a united, frontier-free Europe has led to a strong political plea for generalised, early bilingual education.

The key argument in favour of early bilingual education is based on research that showed children of average intelligence acquired a second language relatively easily. The earlier the bilingual education was started, the more likely it was that the child would become a balanced bilingual, able to switch languages easily and without noticeable effort.

Bilingualism and intelligence

Against this background, some of the counter-arguments against bilingualism lost their credibility. Early studies

warned about the negative consequences of early bilingualism on cognitive development. It was thought that the intellectual energy required for learning a second language was used at the expense of other activities such as mathematics or logical thinking.

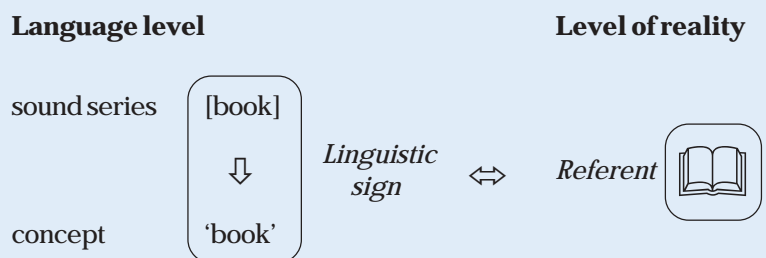
This led to the development of the *balance theory* which claimed that proficiency in one language could only be gained at the expense of the other language, because exposure to a second language from an early age would hamper the process of ‘fixing’ the first language.

More recent research on the relationship between cognitive functioning and bilingualism has undermined this theory. It is now thought that the continual switching of languages is a powerful cognitive exercise for the intellectually gifted child. It can lead to greater cognitive flexibility, and bilingualism could, therefore, enhance intelligence.

W.E. Lambert (1990) found that ‘bilingual youngsters in Montreal scored significantly higher than did carefully matched monolinguals on both verbal and non-verbal measures of intelligence’ (1990:211). This research finding must be considered with some caution, however, as the children in question were part of a prestigious, total immersion language project. Any child who encountered difficulties with the bilingual element of the project dropped out. So, in this case, Lambert’s findings only proved that bilingual education was a bonus for children with an aptitude for languages.

For many children **immersion education in a second language** is too heavy a burden. In fact the positive effects of bilingualism on intelligence are only felt by those of at least average intelligence, according to Cummins and Swain in their *threshold theory*. Below a certain threshold, they maintained, rather than improving cognitive function, bilingualism can be a disastrous experience for the child.

Becoming bilingual requires extra cognitive effort from children. Monolingual children begin the acquisition process by sorting out separate chunks of sound that constitute words from the diversity of noise they hear. Cracking the code of language enables children to relate the series of sounds to the concept, for example, the word ‘book’ to the concept ‘book,’ which in turn refers to objects which differ greatly in form, size and quality. This task requires children to discriminate between different sounds of words (auditory



Scheme 1

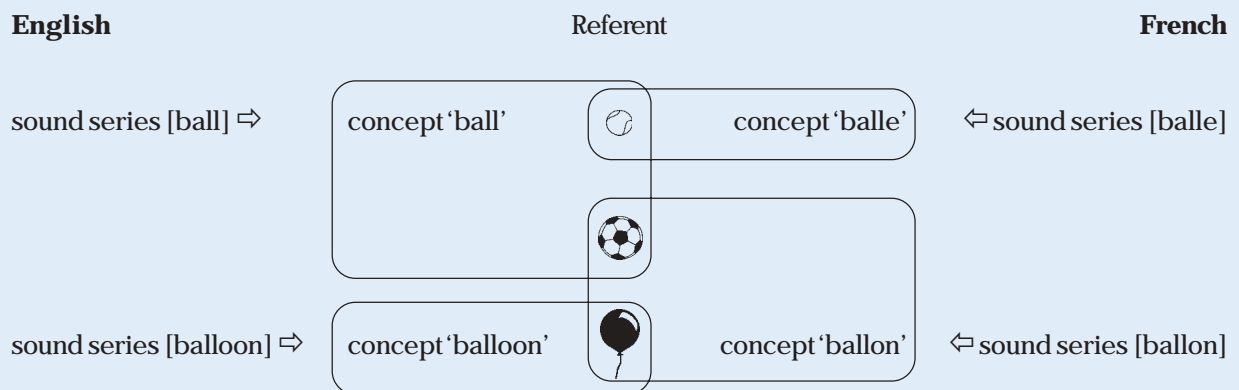
discrimination) and then to have the cognitive ability to relate words to concepts (Scheme 1).

'There's a difficulty with absorbing patterns of language... so when they're faced with another language there's a great potential for confusion and for not succeeding. And if you don't succeed, you lose your motivation and motivation is important for all learning.'

(Video: Dr Steve Chinn)

This is a complex task which not all children can do at the same speed. Speed is one of the basic problems for children who experience specific learning difficulties. Dyslexia has been described as a specific language learning difficulty that has to do with the prerequisites of learning: speed of processing information (aural and written), short-term memory, sound systems in language and organisation. Dyslexic children may well find bilingualism overwhelming as the auditory and cognitive processing required to assimilate two languages simultaneously demands increased cognitive and linguistic aptitude.

The English words 'ball' and 'balloon,' for example, are 'balle' and 'ballon' in French, but the concepts to which they refer respectively are not equivalent. Apart from the fact that bilingually educated children have to be able to discriminate between more sounds than monolingual children, they will also have to discriminate between four 'word forms' instead of two. Moreover they will have to understand that the concepts, and hence the 'referents,' which relate to the parallel sound forms in the two languages, do not coincide. Words in different languages are not exact translations for the



Scheme 2

same concepts. Understanding this will take more time than just understanding what the concept and referent are for a word in a single language.

This simple example shows how intricate the processing of information is for bilingually educated children, compared with that of monolingual children. Obviously processing information will become even more complex when children start reading. At that point children will have to recognise written word forms and be able to relate them to spoken forms as well as to the concepts that are associated with them in both languages.

These mental activities demand acceleration and cognitive effort. For children who already have a problem with

processing at speed, distinguishing the two sets of sound systems and the two sets of conceptual systems may slow processing down to such an extent that comprehension will be hampered and disturbed. Independent from intelligence, disturbed comprehension interferes with intellectual development and as a result dyslexic children can even be put at a disadvantage by a bilingual education.

Sorting out two language systems, developing a double conceptual system and a double vocabulary, expanding the articulatory repertoire, distinguishing two types of input and efficiently switching from one language to another requires linguistic abilities and aptitudes. Parents of children with specific learning difficulties should not underestimate these demands.

Current research projects are, however, under way to detect dyslexia and language aptitude in children, and linguists, speech and language therapists and psychologists are working together to develop a standard European test.

Interactive assistance

'We weren't conscious of which language we were speaking at home. I think you should establish one language as a reference point for the child and this is what we're trying to do now.'

(Video: Stavros Spyridonos)

It is of utmost importance in bilingual education to separate the contexts in which the two languages are acquired as much as possible. The child should not be confused more than is strictly necessary. Ideally, the old rule 'one person – one language,' first formulated by the French linguist Grammont, should still be adhered to since it ensures the highest quality input. For example; in the case of a mixed nationality marriage, it is preferable for each parent to speak to the child in his or her mother-tongue, thereby reducing the risk of transferring his or her linguistic insecurities and errors. But practicalities dictate that in social situations even within the family this rule will have to be suppressed in favour of one language of common communication. This is the better alternative to speaking a mixture of languages, encouraging 'semi-lingualism.'

In order to input language at a high quality level, it is important to expose the child to at least a minimum level of 'motherese.' Motherese (Beheydt 1986) is the special interactive language that mothers use to foster communication with their young children. Children need this kind of simplified language if they are to crack the language code, that is if they are to be able to relate the language system encountered in their environment to the conceptual and referential world. Exposure to such language is necessary for normal language development to take place. If two languages are being learned then it is advisable to provide as much well-tuned input language in both languages as possible.

Parents should:

- be positive about both languages*
- make one language the main one*
- not mix languages up*
- seek help early.*

(Video graphic)

Motivation

'Parents should have a positive attitude to both languages wherever possible, keeping one language dominant and trying not to mix languages – maybe using the mother tongue at home and using the new language for school.'

(Video: Professor Dr Ludo Beheydt)

Motivation is of prime importance for any learning task, including early bilingualism. Not all problems relating to bilingualism are due to cognitive functioning, language aptitude or language input. Bilingual education is most successful when both languages and cultures are highly esteemed by both parents and by the social environment. The success of the Canadian immersion project was largely due to the enthusiasm of the parents of the anglophone children for the project. English remained the dominant language but the French acquired was viewed as being of great social and cultural benefit.

On the other hand, where the language spoken at home is looked down on at school, the child may well feel undermined: 'cultural heritage and its language are subtly stigmatised as a handicap to be washed away' (Lambert 1990:217). Under such an attack, the child's learning difficulties can only be aggravated. For children who are not equipped to cope with bilingualism psychologically and emotionally, their intellectual and emotional development can be affected, giving rise to stress and anxiety.

Bilingual education through **immersion** in the second language should not be taken on lightly. It should remain a matter for careful consideration.

Further reading

A more comprehensive survey in article form is to be found in *Bilingualism and the Young, Le Language et l'Homme*, vol. XXIX, no. 3, pp. 225-247: L Beheydt (1994). A general, and very readable, introduction to bilingualism can be found in *Life with Two Languages*: F. Grosjean (1982), Harvard University Press.

A comprehensive introduction to bilingual education which gives a more professional insight into this complex issue is *Bilingualism in Education. Aspects of theory, Research and Practice*: Jim Cummins and Merrill Swain (1986), Longman, London/New York.

A survey of the discussion about intelligence and bilingualism, about the conditions for the success of bilingual education and about the role of attitude and motivation is to be found in *Key Issues in Bilingualism and Bilingual Education*: Colin Baker (1988), Multilingual Matters Ltd. A final report on the Canadian project can be found in *The Development of Second Language Proficiency*: Brigit Harley, Patrick Allen, Jim Cummins and Merrill Swain (eds) (1990), Cambridge University Press.

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Bilingualism and Dyslexia – A Practitioner’s View

*A. G. M. P. Cooreman,
Headmistress of a Belgian Dutch-speaking school
for children with specific learning difficulties*

Working with dyslexic pupils in mainstream and special education, I have had ample opportunity to observe the problems dyslexic children encounter acquiring literacy in their own language and the problems they have learning foreign languages. I have also observed a number of bilingual children and children who spoke one language at school and another at home.

I agree with Professor Beheydt’s thesis that children with above-average intelligence can learn a second language with relative ease. Nevertheless, I have met children of very low mental abilities who have learned to speak one or more other languages with apparent ease, and children with very high mental abilities who have never learned a second language, not even the dialect spoken by their parents at home.

Bilingualism for school purposes and bilingualism for social purposes

The depth of knowledge of a language required for school work is far greater than that required for social contact. People can make themselves understood with limited vocabulary and no grammar. This, accompanied by a similar level of competence in reading and writing, may well be sufficient for communication purposes at home and in the office.

It is important that parents speak to their children in their own language, as they can best express their feelings in their mother tongue and this ensures quality input. But the vocabulary children need at school is very different from their social vocabulary. In my experience, most children who speak Dutch at home, but who had started school in another language and then switched back to Dutch, needed about 18 months before they were completely at ease with 90% of specific Dutch school vocabulary. It is easy to understand that dyslexic pupils with short-term memory problems have to make considerable effort to succeed at school. They experience similar difficulties each time they start a new subject, such as geography or chemistry.

Language development and dyslexia

Dyslexic children have more difficulty coming up with the right word, especially under pressure. Problems with word

retrieval make them less confident. Their problems in recalling words will occur in any language, written and spoken, and make their language abilities look poor. Often they do not finish sentences, or start sentences again halfway through, to disguise the fact that they cannot find a particular word. This gives the impression that they have weak grammatical skills.

Dyslexia is a learning difficulty that also has to do with the prerequisites of learning. In my view, this does not mean that dyslexic children would find it difficult to learn two words for the same concept, but would have difficulty finding the right word at the right time. They might use a French word in an English sentence, whereas non-dyslexic children would simply refer to the object as 'that thing.'

The fact that dyslexic children find it hard to manage complex tasks – doing several things at once – does not mean that they are incapable of complex thinking. They have to invent strategies all the time to help them remember things that are automatic to others. They cannot always put their thoughts on paper when asked at school. I have even met many high achieving adult dyslexics who still experience language difficulties when they start to talk about an unfamiliar subject. Many had successfully learned other languages after they had left school, though some of them admitted to not being able to write in another language.

Dyslexia and foreign languages for academic purposes

In my experience, it is the continual sense of failure that makes the whole experience of dyslexia so negative. Obviously, when learning a foreign language in a regular classroom, dyslexic learners experience more problems than their non-dyslexic counterparts, but if you give them sufficient structure, time and practice to acquire the basics on all levels (reading, writing, speaking, comprehension) they can make progress. Mixed with non-dyslexics who learn easily in an intuitive, global way, dyslexic learners will only experience failure through not receiving enough positive feedback: under this pressure they will start mixing and confusing their words in an effort to keep up.

The method used at our school involves learning texts by heart before starting work on learning how to pronounce and spell individual words. We place great emphasis on the differences and similarities between the new language and their mother tongue. Grammatical rules are explained repeatedly in both languages. In learning a second language, dyslexic learners can come to a better understanding of the linguistic rules in their mother tongue. In fact, the process used is similar to that used to learn basic literacy skills in the first language. Dyslexic children over seven who do not learn simultaneously to speak, read and write a second language have greater problems achieving written and grammatical skills later on. Dyslexic children who learn spelling in a free

context without proper instruction have severe and lasting difficulties in reading and writing compared with those who have received early, structured training.

Case study

Toon, a fifteen-year-old boy of average intelligence, failed every subject in mainstream school. He was dyslexic and could not write an intelligible text in his mother tongue, Dutch, and made numerous mistakes in his spoken language. In order to pass his final examinations he had to learn French, English and Spanish, with the emphasis on reading and oral communication. He experienced the same problems in these languages as he did in Dutch. But he passed these exams, and several others, about fifteen months after having followed the training described above. When he reached seventeen, he spent six months in Guatemala and perfected his Spanish and English. At present he is looking forward to studying languages in England. Although he is fluent in spoken English and Spanish, he still has poor literacy skills. Nonetheless, his ambition is to teach foreign languages or become a journalist. Who knows?

Children on the Move – Culture Shock

*Kirsten Høgh Thøgersen Ph.D,
Clinical Psychologist, Beijing United Family Hospital, Beijing,
People's Republic of China*

'Over 16 million European residents now live in a country other than their own. This means that hundreds of thousands of children are growing up and going to school amidst a new culture and a new language.'

(Video commentary)

'At home you feel secure. You live in the same country as your grandparents, you know that your own children, and some day your grandchildren will also live there. Somehow, when you are at home, you know that things will always be the same. Taking part in that history is like keeping an important promise. When you move it is like breaking that promise.'

(Statement by Anna, a 17-year-old who had just moved, again)

How moving can make learning difficulties worse

Several European research projects show that in groups of children and young people living abroad, the gap is widened between those who are academically strong and the other children. We should be aware of the fact that while moving can make academically strong children stronger, it can also put academically weak children at a disadvantage.

Nevertheless, my conclusion is that although a successful transition into a new culture is difficult, it is not impossible and it does have its own rewards. In the following I will focus on how children with learning disabilities and their parents can cope with what can be a very difficult period.

More than 10% of all school children have specific learning difficulties, which means that there is a discrepancy between their ability to learn and their intellectual capacity and motivation. Learning difficulties, especially significant reading problems, are common, and can be continuous and disabling unless properly addressed. **Children with specific learning difficulties need both special teaching methods and more time to learn things than other children.** Above all, they need continuity if they are to be able to carry out the task in hand.

When these children move to a foreign country and a new school environment their weaknesses will be magnified as they go through what can be a very difficult period of transition. It is debatable whether it is wise to move children with learning disabilities around the world at all, but often there is no choice as more and more parents find work abroad and their children have to accompany them.

Home is a safe haven

Children with learning difficulties function best when they are in a stable and secure environment. Structure and routine are extremely important for them. The familiar school environment does not force change upon a child at too rapid a pace. Children with a weak memory, for example, will have worked very hard to memorise a route through town. They may have finally learned the school rules and regulations by a process of endless repetition. Small things, which may not seem complicated for most children,

can be hard-won achievements for the child with specific learning difficulties.

Surprising as it may seem, once something is learned it is learned for good, as long as the child's environment is stable. Any learning difficulties may not appear all that serious while the surroundings remain familiar and secure.

But when moving abroad, it is not always possible to maintain familiar routines. It is therefore of the greatest importance for children or young people to be surrounded by people who can identify if and when any learning difficulties arise, and show understanding and acceptance of their particular way of learning.

Understanding and acceptance is often a question of being able to communicate with the child. Typically children with specific learning difficulties are blocked not so much in working things out, but rather in understanding the nature of a problem in the first place and the tasks required to resolve the problem. Sometimes a task will simply have to be broken down into bite-size pieces and presented in a way that the child understands.

The problem of children with specific learning difficulties not measuring up to the demands of the school ought to be turned around: it is more a question of the school having to measure up to the needs of children by providing appropriate teaching.

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Culture Shock

Moving to another country qualifies as a major life crisis. It is a disorientating experience for all of us, but particularly for children with specific learning difficulties. The hard learned habits and routines disappear overnight and they are faced with changes taking place in all areas of their lives at the same time.

On top of everything else there is often a change of language, which complicates things further. When everything from street names to the names of friends and teachers has to be learned in a new language, the task can seem daunting – even overwhelming.

Expatriate schools – academics come to the fore

In your home country, it is likely that school is an intrinsic part of the culture in which you live. Abroad, the school is often detached from the surrounding culture. This is especially true for expatriate schools.

As a general rule, expatriate schools pay less attention to the holistic approach in education, whereby the child's social, emotional and cultural needs are attended to in addition to the academic programme. This only makes the situation worse for children and young people with specific learning difficulties.

Expatriate schools often have high academic standards, tough competition and a heavy workload. If children cannot read, write and do maths at speed they are at a serious disadvantage, particularly as they are now away from their secure, supportive home environment where they were well-known and their best efforts were valued. Although local teachers may be supportive, they cannot always be counted on to have the qualifications and teaching methodology in special needs to help children or young people make the transition into a new system successfully. Children with specific learning difficulties can find themselves in a stressful situation, overwhelmed by the pressures of having to cope with fast academic performance.

...it is so important for the school to focus on social and emotional qualities besides academic achievement.

In moving abroad it may be that children find themselves face to face with their learning difficulties for the first time. As a result they may well feel that the move is the cause of everything that is now going wrong for them. They see the move as a catastrophe. Their parents may also feel at a loss as they watch their children struggle to meet the demands made on them in the new environment. One mother explained that she felt as if her child's personality slowly changed beyond all recognition as the new school focused exclusively on academic performance, giving no credit to her child's other obvious strengths and abilities. She would look at her son, Peter, and hardly recognise him for the child she once knew.

I well remember Peter myself. He had difficulty in expressing himself both in speaking and writing and yet he was fully able, indeed gifted, in expressing himself in many other ways. He had an extraordinarily rich imagination and was very creative. He was a natural poet and artist. These qualities are often found in children with specific learning difficulties: it is as if their imagination is enhanced by their dyslexia. This underlines all the more strongly why it is so important for the school to focus on social and emotional qualities besides academic achievement. When Peter moved abroad, and his old routines disappeared, it was vital for his development to help him find new ways of expressing his

It Can be Done

Even though things may seem impossible right after a move, most children learn to cope well in the end. Despite the hurdles, the child in a new setting will have additional opportunities to learn. Ultimately, it can be to the child's advantage to be extended to reach his or her full potential and be stimulated earlier rather than later in life, especially if the learning process involves the whole personality of the child. Moving can be a positive and stimulating experience; it can teach children and young people to be expressive and aware of their strengths and how to cope with their weaknesses. This is especially true if the child with learning difficulties has been labelled and overprotected before moving; and has not had enough stimulation over a period of time.

European children with specific learning difficulties do face a major challenge in moving from their home environment to a new one, and we should all be aware of what they are going through in the process.

It can be only beneficial if the child's capabilities are successfully extended – and this does happen – maybe even beyond everyone's expectations. Ironically, what in the first instance appears to be a pressurising educational environment can also be the very catalyst which eventually uncovers the child's potential. I have seen many encouraging examples of this.

Nonetheless, European children with specific learning difficulties do face a major challenge in moving from their home environment to a new one, and we should all be aware of what they are going through in the process.

A 'Bill of Rights' for them might read as follows:

I have the right

- not to justify my existence in this world
- to identify myself differently in different situations
- to receive education according to my needs and not only my level of academic performance.

Reference

See B. Hall, G. Masreliez-Steen, (1982) *Report on Environmental Factors in raising Children Abroad*, Ministry of Foreign Affairs, Sweden. Government Publications Office, Swedish title: *UD-Barnens uppväxstmiljö ock utveckling*, 1982, Liber, Allmänna Förlaget

Health: the Whole Child

Edited by Elizabeth Hocken, SRN, SCM, Higher Dip.HV

'It is important to recognise the uniqueness, the individuality of each child: what works well for one child may not necessarily work for another.'

(D.I.T.T Member)

Good health is important to all children if they are to perform well at school. For a child with learning difficulties, it may be necessary to look beyond routine health checks to arrive at the root of a problem, but it is essential to correct any focusing deficit, hearing loss and dietary deficiencies first.

A learning-disabled child may present many other symptoms. Dyslexia is frequently associated with deficits in concentration, memory, co-ordination, dexterity, eye control, listening and difficulties in balancing. It is therefore preferable to take a holistic approach when assessing the child.

Vision: optometry

Optometry is the treatment offered by an optometrist to improve ocular processing. The optometrist identifies the areas of weakness by administering a series of tests and taking a detailed history. Difficulties include:

- difficulty with holding a fixed image so that blurring, double vision and merging of images occurs
- poor tracking or following a moving object, with consequent poor ball-game skills
- poor saccades (alternating jumps and fixations) essential for reading
- inability to alter the focal length from near to far vision rapidly, which leads to poor copying skills
- aberrations of depth perception and spatial arrangement, with poor copying, poor layout technique, poor drawing and clumsiness
- aberrations of peripheral vision, either increased (causing them to be easily distracted and to have difficulty with central focusing) or decreased, when the visual field is reduced.

Treatment consists of teaching a series of exercises, which are practised over a period of some weeks, to stimulate the ocular motor nerves (the nerves on the outside of the eye that control eye position and movement rather than the visual pathways).

Some optometrists may also test for colour sensitivity and prescribe coloured lenses to reduce colour sensitivity. Lens prescription must only be made up by specialist optometrists or opticians. Most European countries have institutes of optometry which keep lists of practitioners and are happy to refer patients. (See www.ditt-online.org – 'Contacts')

Hearing problems

Dyslexic children often have a history of repeated ear infections, sometimes resulting in 'glue ear,' and fluctuating hearing loss. This condition contributes to problems with spelling, listening comprehension and short-term auditory memory. Glue ear itself is treated by inserting tiny tubes, or grommets, into the ear to drain away the tenacious fluid which has collected there because of repeated infections. Sometimes there are sound-frequency losses, and distorted vowel perception will cause listening comprehension, speech and spelling difficulties.

Speech and language weakness

The child who is slow to develop speech and language skills will benefit from being seen by a speech and language therapist. These professionals are specialists in the assessment, diagnosis and treatment of both spoken and written communication disorders. Early intervention for the child with a speech and language delay can be very beneficial.

Auto-immune system

Weak auto-immunity which causes allergies is another problem increasingly associated with learning-disabled children. Allergy testing is available from specialist doctors. Common allergies are to wheat, dairy products, caffeine and food additives, especially colourings and preservatives. Treatment usually consists of excluding the offending foods from the diet, or controlling the home environment as much as possible in the case of an environmental allergy.

Nutrition

A balanced, healthy diet made up as much as possible of fresh, whole foods will benefit most children. This may well be of particular importance to a child with specific learning difficulties. Minerals, especially zinc, magnesium, manganese and calcium, are all important for proper brain cell function and doctors can prescribe supplements to good effect when analysis shows children to be deficient. Fatty acids, important for nerve cell function, are sometimes not produced by the body and may also need to be given as supplements.

Movement

There is a range of therapies available throughout the European Union using movement exercises designed to improve co-ordination, spatial awareness and treat developmental delays and learning disabilities. These include educational, neuro-developmental therapy, neurological organisation training, sensory integration and vestibular stimulation.

Counselling

As screening for specific learning difficulties becomes more widespread, early intervention should reduce the incidence of associated psychological problems. With increased understanding of the experience of children with specific learning difficulties and a broad view of how their well-being can be looked after on all fronts, fewer children will be demoralised by their experiences at school to the extent that they need professional counselling to regain their confidence and self-esteem.

At an unofficial level, the right befriender or mentor can make all the difference: boost morale and provide a way forward.

Warning signs of Dyslexia

Extract from BBC video

'His ability appeared to fluctuate from one day to the next – a common symptom of dyslexia.'

(Video commentary)

'Sometimes I would find the sums easy, then other times they would seem difficult – at least to me. But when the teacher would give me pages to read, my mind would just go blank. I couldn't manage to read....'

(Video: Alessandro Capaldi)

An assessment is the first step in helping children or young people to overcome their difficulties. With this in hand, the qualified teacher can match the teaching programme to the child's particular learning needs to develop self-confidence, motivation and coping strategies for learning.

The earlier dyslexia is diagnosed, the better. A child exhibiting a combination of the following symptoms should be assessed by an educational psychologist.

There will always be:

- difficulties with written language
- difficulties with writing
- serious problems with spelling
- slowness in learning to read.

There will often be:

- difficulties in maths, especially in absorbing signs and patterns such as multiplication tables
- problems with short-term memory and organisation
- difficulties following directions and complex sequences of tasks
- comprehension problems with written texts
- fluctuating ability.

There will sometimes be:

- difficulties with spoken language
- problems with judging distances and spatial awareness
- confusion between left and right.

An assessment is the first step in helping children or young people to overcome their difficulties. With this in hand, the qualified teacher can match the teaching programme to the child's particular learning needs to develop self-confidence, motivation and coping strategies for learning.

Assessing Dyslexia

*Gunilla Löfgren Nisser, M.Sc,
Department of Clinical Neurophysiology, Karolinska Hospital,
Stockholm, Sweden*

Introduction

'To someone with dyslexia, the letters and words on a page might move around, merge with each other, flip or invert – so that d becomes b or p or q.'

(Video commentary)

'As well as reading and writing problems, dyslexic children will often become confused by directions and by complex sequences of tasks.'

(Video commentary)

Dyslexia, which is a reading, writing and learning deficit, concerns us all. Dyslexic children and adults are severely disadvantaged themselves, but their condition also affects their parents, families, school teachers and society at large, since up to 10% of the general population suffer from dyslexia. Many dyslexics will have gone through school without a proper diagnosis and consequently will not have had adequate instruction in reading and writing.

The most common expression of dyslexia is a difficulty with reading and spelling. It is also well-known that dyslexia may cause mirror-writing of letters and numbers. These may be the most prevalent manifestations but there are other signs which warrant a learning deficit's being labelled dyslexia. (See 'Dyslexia First-hand')

The most prevalent manifestations are outlined under 'Warning signs of Dyslexia'.

Knowledge about the origin of dyslexia is now surfacing from the large amount of research into the brain and its activities. There is an emerging consensus that working memory deficit in a cluster of brain functions is a cause of dyslexia. Dyslexia affects various parts of the brain that control language. It may lead to dysfunction in some or all of the following: visual memory, auditory memory, sequence memory, word retrieval, speech and motor areas. Therefore it is not enough to assess reading, writing and phonological awareness. Additional dysfunctions must be included in the definition of dyslexia.

Until recently, the following definition of dyslexia was widely used: 'Dyslexia is a neurologically based, often familial, disorder which interferes with the acquisition and processing of language. Varying in degree of severity, it is manifested by difficulties in receptive and expressive language, including phonological processing, in reading, writing, spelling, handwriting, and sometimes arithmetic. Dyslexia is not a result of lack of motivation, sensory impairment, inadequate instructional or environmental opportunities, or other limiting conditions, but may occur together with these conditions. Although dyslexia is lifelong, individuals with dyslexia frequently respond successfully to timely and appropriate intervention.' (Orton Dyslexia Society, 1994)

It is of vital importance that dyslexia is detected and treated early. Dyslexia does not disappear and one does not grow out of it. A diagnosis is necessary and should not be regarded as a negative classification. If a child falls behind in learning to read and spell, it is advisable that the reason be investigated as soon as possible. We can identify, even at pre-school age, children who have language deficits of the kind that might cause reading and writing problems once they start school. If these children were to receive

the correct help they need, i.e., multi-sensory training and special language development, they could make a better start. This would prevent their school years from becoming a nightmare and their adult life a constant struggle.

Method

In order to decide whether the cause of a reading problem is dyslexia, a cluster of brain functions needs to be assessed. We need to test each of the sensory areas if we are to identify any learning deficits.

The areas to investigate are the **visual, auditory, motor, memory and sequencing capabilities.**

- **Visual tests** may include: decoding, reading, and visual scanning tests.
- **Auditory tests** may include: word and sentence repetition, spelling and auditory perception tests.
- **Motor tests** may include: copying designs, writing, tracing with the finger, and rapid naming of objects (i.e. verbal expression).
- **Sequence tests** may include: multiplication tables, months of the year, alphabet, repetition of multisyllabic words and tapping rhythmic sequences.

The desired outcome of a battery of tests is to make it possible to assess which brain functions are interfering with the acquisition of reading, writing and learning in general. An evaluation tool must necessarily contain many tests, and preferably more than one measure for each sensory area which needs to be examined.

The test battery included here is an attempt to do that. It is not a finite solution but a suggestion as to which areas to examine. A prerequisite to perform an evaluation of this kind is that the examiner be thoroughly familiar with the means by which these sensory areas can be evaluated. Hence the battery is a tool to which each evaluator may bring his or her own test material. If tests are not readily available in every language, they can be constructed to suit any language.

Some non-verbal tests can be used as they are:

- LAC (Lindamond Auditory Conceptualisation test) by Pat Lindamond
- RAN (Rapid Automatic Naming test) by Denckla & Rudel
- sequence tests from the Bangor Dyslexia Test, by Tim Miles.

In addition to the cognitive tests, the assessment should include a psychological evaluation, i.e. a WiSC (Wechsler's Intelligence Scale for Children) or WAIS (Wechsler's Adult Intelligence Scale) test or the equivalent. It is equally important to take a careful history of genetics, the mother's pregnancy, birth, illnesses, motor and language development, and reading and writing skills development. The history is collected in a separate questionnaire completed by the parent or guardian.

In order to make a practical assessment tool, a protocol should be constructed with the names of the tests, test results and comments listed on the first page. This provides a clear overview of the

'Educational psychologists test children's memory, their awareness of time and space, their spoken language, spelling and numeracy skills. Once assessed, children with dyslexia can either be given extra help in their regular school or referred for special help.'

(Video commentary)

problem areas. The protocol should contain the entire test battery with each test on a separate page and with the examiner's notations and corrections to refer to if needed.

Thus equipped with as much information as possible about the person's background and present functioning, the examiner can begin the task of assessing whether the test results combine to portray a person with dyslexia or not.

After careful examination of the material, the dysfunctional areas will stand out. If the main problem is visual discrimination, spelling and decoding will be the main deficits. If there are both visual and auditory deficits, they will manifest themselves in the inability to repeat multisyllabic words, in reading, spelling, and often in sentence repetition.

As a rule, motor and sequencing deficits are present when we are dealing with dyslexia. These problems become apparent in multiplication and rapid naming tasks, as well as in the early stages of motor and reading development.

When the material has been examined, and the data of the dysfunctions have been compiled, a diagnostic prescriptive teaching programme should be constructed. This programme needs to be re-evaluated at regular intervals to ensure that there is progress.

Learning support

It is essential that teachers are qualified to perform the multisensory step-by-step teaching that will enable people with dyslexia to improve their learning. In addition, the teacher needs competence in speech sounds and their representation with letters, etymology (morphology and word origins), and whole-word and phonics reading instructions, as well as a good understanding of the psychological barriers of people with dyslexia.

Early detection and treatment is of utmost importance in order to avoid unnecessary damage to the ego. Dyslexia tends to weaken people's self-confidence because of daily encounter with failure. Before being diagnosed, dyslexic people have usually had to cope with a difficult and disappointing learning situation for many years. In order to rebuild confidence and restore self-image it is, therefore, absolutely essential to avoid failure during retraining. Intervention should only be undertaken by a qualified professional.

(See 'Protocol for Dyslexia Assessment' on next page.)

In order to rebuild confidence and restore self-image it is absolutely essential to avoid failure during retraining.

Protocol for dyslexia assessment

Date	Examiner
Name	Date of birth
School	Grade
Address (home and school)	Telephone (home and school)

Genetic information

Hearing & vision check

Raven's standard matrices (or equivalent)

Laterality

Vocabulary

Decoding:

words

pseudo words

Reading of text:

	aloud	silently	listening
speed			n.a.
comprehension			
accuracy		n.a	n.a.

Word repetition

Phonology

Sentence repetition

Spelling dictation

Writing:

dictated paragraph

composing a paragraph

the alphabet

Mathematics

Sequences: months, tables, etc.

Rapid naming of objects

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Dyslexia First-hand

Eric Woehrling, Ph.D

Eric Woehrling graduated from the European School of Brussels II. He studied English at Corpus Christi College, Cambridge and took his Ph.D at the University of Liverpool. He went on to become a European equities investment analyst with Stewart Ivory & Co., Edinburgh, UK.

Dyslexia is hard to define as it covers a lot more than inverting words or having trouble reading. Although dyslexic, I had no trouble with reading and writing but I persistently misspelled certain words. My problem was that I couldn't do things like understanding time-tables, reading maps or remembering directions.

...everyone else automatically knew what rules to follow and I didn't.

Dyslexia often leaves you feeling exposed ... like a soldier on parade who turns left when the rest of the regiment is turning right.

My career as a dyslexic has come full circle. I have suffered throughout my schooldays as a result of dyslexia, but I have slowly learned to cope with it to the point where I recently got the job I always wanted.

Yet dyslexia does not go away. It keeps cropping up in odd ways. I had re-read my Ph.D before the oral examination, and detected hundreds of mistakes which, curiously, my external examiner made no mention of during the examination. I asked him, at the end, whether he had noticed any mistakes and he replied that he was dyslexic and that he had only noticed four. Intrigued by this, I told my supervisor, who went to check the four mistakes and discovered that the examiner had been so dyslexic that none of the four were actually mistakes in the first place. This just shows that even acute dyslexia is no impediment to an academic career.

Dyslexia is hard to define as it covers a lot more than inverting words or having trouble reading. Although dyslexic, I had no trouble with reading and writing but I persistently misspelled certain words. My problem was that I couldn't do things like understanding time-tables, reading maps or remembering directions.

Now, *lexis* in ancient Greek meant the manner in which you said something, the style if you like, contrary to *logos* which meant the content of what you said or the reality. *Lexis* in a more extended sense describes the conventions which allow us to communicate and live together and make sense of a common *logos* or reality. What underlies the different problems described as 'dyslexia' is a difficulty understanding these conventions.

On my first day at school in Brussels, our first lesson was Maths with our form teacher, who gave us the time-table for the year. I inexplicably assumed that Maths would be the first lesson of every day of the week. I was, partly as a result of this, late for every lesson every day of the first week and frequently for the rest of my school days. Once the teacher had to send a search-party for me. What hurt me was the fact that my interpretation of the time-table was not *a priori* illogical, although it was certainly strange; it was just that everyone else automatically knew what rules to follow and I didn't.

Dyslexia often leaves you feeling exposed in this way, like a soldier on parade who turns left when the rest of the regiment is turning right. In my case, turning up late was a ritual the whole class looked forward to and my disconsolate entry would, perhaps

'Undiagnosed dyslexia can build up a powder keg of frustration and anger.'

(Video commentary)

'If you imagine a child in school is constantly dealing with written material. They will underperform all the time.... The effect on their self-concept is very bad. It will also affect their behaviour, and their life chances in the future. I'm amazed that so many children survive this process.'

(Video: Dr Steve Chinn)

The most important element is self-belief, because for years you can make efforts to improve yourself and get no results or recognition. It is very easy to give up then, and you have to keep believing it will come right.

understandably, elicit waves of hysterical laughter. Those and other related difficulties made me into a figure of fun with my peers, and frequently played havoc with my school work, thus preventing me from achieving my potential. It all seemed so unfair because there was never anything fundamentally irrational about what I was doing; I consequently felt resentful and humiliated much of the time. Today, when I make mistakes similar to those I made in those days, I can feel the frustration well up purely because of the associations raised.

This leads to an important point. Though spelling and time-tables are often arbitrary, they are essential to life in society. These conventions are so central to our world that when dyslexics question them it often makes people feel insecure. It is because of this that teachers can sometimes be so harsh with dyslexics.

Certainly, the knee-jerk exasperated rejection of dyslexics is harmful and should stop. But dyslexics must also learn to accept the conventions of society as their own, and to understand that these are not mere trivialities. To want to invent your own ways of doing things is to isolate yourself.

To the harsh teacher, who will dismiss a beautiful essay because it is full of dyslexic mistakes, we can retort, as the saying goes, 'the spirit brings life but the letter kills'; but to the dyslexic who cannot see the point of spelling (and I am thinking mostly of my former self here) I would say that without the letter the spirit is just a lot of air. Dyslexics should be confident that they have something of value to say even if it does not always conform to linguistic and other lexical conventions, but they should still learn to accept those conventions and, as it were, make their peace with the world.

In coping with dyslexia you are absolutely dependent on others and absolutely dependent on yourself at the same time. I was lucky to have parents who supported me through thick and thin. They were prepared to stand up for me even when I was in the wrong, and they believed in me with such fervour that I was able to continue believing in myself when everything seemed to fall apart. I also had great teachers who were able to recognise some value hidden in my chaos, but were also consistently able to criticise and help me identify those weaknesses which prevented the value from revealing itself.

At the same time, as I say, you are absolutely responsible for yourself. The most important element is self-belief, because for years you can make efforts to improve yourself and get no results or recognition. It is very easy to give up then, and you have to keep believing it will come right.

The second element is ambition. You have to be willing to sacrifice and make efforts to make yourself a success. The cliché of 'going that extra mile' hits the mark here. Once you have, say, made your paper 95% error-free, you have to be willing to stay up an extra hour to make it 96% error-free, and then keep working until it is perfect. Whether it was in re-reading my job application forms or the final chapter of my thesis, going the extra mile has meant the difference between success and failure for me.

There is a lot of value to be released from dyslexia in this way because I think the act of not following conventional lexis gives you an independence of mind and an original approach. Sometimes it

Whether it was in re-reading my job application forms or the final chapter of my thesis, going the extra mile has meant the difference between success and failure for me.

also gives you a better understanding of conventions because you have actually had to consciously learn them. I now find that I am a useful proof-reader, because checking for my own mistakes has given me an extra habit of vigilance.

Today, in my job, as I calculate profit forecasts or how many shares to buy, I am able to do so without making dyslexic mistakes. And yet I still make mistakes, some of them typical of a dyslexic. But I also realise that everyone, dyslexic or not, sometimes makes similar mistakes. Then, I wonder, am I just making the same mistakes as anyone would, or is this a residue of my dyslexic nature? The great thing is that I just can't tell – I have changed so much that I'm just unable to 'sdistinguish' between the two.

What Learners Can Do

Compiled by Rachel Davies, BA

'With teaching adapted to their particular learning style, young people with dyslexia should be able to perform on a level with their peers in virtually every sphere – even in writing and spelling – now, with the aid of new technology.'

(Video: Dr Steve Chinn)

Famous dyslexics include Auguste Rodin, Gustave Flaubert, W.B. Yeats, Winston Churchill, Albert Einstein, Walt Disney, Steven Spielberg, Hans Christian Andersen, and Leonardo da Vinci, whose mirror-writing can be seen at the British Museum.

Everyone learns differently

Get to know your own style of learning. Do you learn best by

- seeing
- hearing or
- 'hands on' experience?

Self-management

- Make copies of your school timetable and post them around the house – in the kitchen, in your bedroom or wherever you do your homework. Make spare copies to keep as a stand-by in case you lose them.
- Write down for yourself – or get someone to help you if this is easier – the dates and times of everything: class assignments, extra-curricular activities, exams, appointments, etc.
- Make sure you have the telephone numbers of a couple of friends who can tell you what your homework assignment is if you have failed to record it clearly.
- Pack your school bag with everything you will need the following day before you go to bed. This ensures a calm start to the day.
- Know your natural rhythm. Do not attempt homework at times when you are tired or hungry, or are having a low period during the day.
- Try to make sure that you have a peaceful place at home, with the minimum of distractions, in which to do your homework.
- When handling long assignments, break them down into small chunks and take frequent breaks.

At school:

- Sit at the front of the class and away from the window to avoid being distracted.
- During class take notes and invent your own abbreviations and mnemonics to help you record and remember the information.
- Tape-record lessons and listen to the recording when you are feeling relaxed and can take more in.
- Perfect your computer skills; typing can be a lot faster and easier than writing. Proof-read and use the spell-check to pick up mistakes.
- Work with your tutor or class teacher to develop your study skills, especially in preparation for exams.

'Throughout the European Union as many as 37 million people – 10% of the population – have dyslexia to some degree – 4% severely.'

(European Dyslexia Association, 1998)

- Never be afraid to tell your teacher if you do not understand something. There will always be someone else in the same position as you who is too frightened to ask.
- Remember that being dyslexic may be the reason that you find school work hard, but it is not an excuse for not trying your best.
- Use the Internet to get other ideas on study skills for dyslexics.

What Parents Can Do

Compiled by Rachel Davies

'Little is said about the devastating effects both emotionally and psychologically upon a dyslexic child and indeed repercussions on the whole family unit. Most dyslexics have a low self-esteem and their frustration is transmitted in varying degrees into emotional and behavioural problems. Their feelings of inadequacy are accentuated by attitudes in main stream schools where dyslexic children perceive themselves as failures amongst children who read and write with apparent ease.'

(Barbara Dray, parent)

'I was very surprised to learn he had problems. At first, it's very hard to accept it. To begin with, you react badly, and you tend to be hard on your child. But we haven't been taught how to teach him – it's not something anyone can do. So I was very strict, I pushed him – but it did no good – so I realised we needed to find specialist help.'

(Video: Stavros Spyridonos)

When first told that their child has a learning difficulty parents often go through a series of emotions which include denial, blame, fear, anger, guilt, isolation, and sometimes panic. Only when they have accepted that the child has a specific learning difficulty, can they start working on positive strategies to help that child reach his or her full potential.

Parents should be open to acknowledging that their child has dyslexia. In some countries, a child recognised by the local education authorities as dyslexic has legal rights to be taught in a specifically adapted way. Acknowledging dyslexia will allow for a more suitable choice of subjects at secondary school level which will enhance the strengths and avoid any weakness of the dyslexic learner in a varied curriculum.

The earlier the child with specific learning difficulties is diagnosed, the sooner appropriate help can be found and the greater the chance that disabilities can be overcome.

- You know your child better than anyone else. If you think there is something wrong, there probably is.
- If you suspect an educational problem, don't ignore it. Arrange a professional assessment for your child. If there is nothing wrong, you and your child will feel reassured. If difficulties are diagnosed, you will have the relief of knowing where you stand.
- Make home a safe and encouraging place. School can be a disheartening experience.
- Encourage any particular talents that your child exhibits such as art or sport. Make him or her feel they can succeed in other areas of life. Small-group activities can help.
- Never discuss a child's learning difficulties in front of them without including them in the discussion.
- Praising your child encourages positive behaviour. Remember the child is more normal than different. Emphasise any strengths and particular abilities.
- 'Never forget that the child with learning difficulties needs what all children need: love, acceptance, protection, discipline, and the freedom to grow and learn.' (Richard Lavoie, see www.ditt-online.org under 'Tools & Technologies')
- Because of being emotionally involved, the parent is not always the best person to give the child additional practice and educational back-up. In this case, one-to-one teaching by qualified specialists is the answer.

Before you move away from home:

- Research and evaluate the educational options in the host country carefully before committing yourself to a move overseas. Find out about local support groups and the amount of help available in your own language.

- When visiting prospective schools for your child, take with you recent examples of school-work and recent school and educational psychologists' reports. It is important to give the school as full a picture as possible of your child's abilities and difficulties.
- List questions to ask at schools you visit (a checklist in French, English or German is available from D·I·T·T).

Once your child is at school:

'Dyslexic pupils can succeed at school – they just need different kinds of teaching.'

(Video: Pauline Cogan)

'Parents and children should recognise that they have a problem, but dyslexia is a problem that can be helped – children and young people can be taught to manage it.'

(Video: Pauline Cogan)

- Be prepared to make time to back up homework or organise appropriate back-up by a specialised teacher.
- Make sure all the class teachers are informed of the educational psychologist's assessment and recommendations on a prepared A4 sheet to be handed to them.
- Keep regularly in touch with the teachers: involve them in helping your child's peer group understand what it is to be dyslexic and how they can help.
- Colour code all books and bags so that your child recognises them instantly. It works!
- Teach your child how to pack and unpack a school bag and organise a pencil case. Do not assume that these skills will be acquired naturally.
- Keep a record of how long homework takes and share this information with the class teacher who may be unaware of how much time your child needs.

Strategies:

- Read assigned books or material to, or with, your child. Knowledge and understanding are important, so explain the meaning of new words and discuss what is going on in the text.
- If the use of conventional dictionaries and diaries is too difficult or time-consuming, explore and teach the use of electronic tools, such as electronic organisers and spell-check, dictionary and appointment-calendar software.
- Adopt a common-sense approach. If a child asks for help with spelling or grammar when writing, give the answer and let them get on. This applies equally with maths; dyslexic children often have problems with rote memory. Supply the answer if they know the process.
- Make time to listen to your child. Give him or her the opportunity in a calm atmosphere to tell you what happened during the day or what his or her concerns are. Sharing problems with a sympathetic listener can make them seem much less burdensome.
- If you have a dyslexic child, find out about support groups and other relevant organisations in your area. It is often a great relief to know that your family is not alone in helping a child with learning difficulties, and you will receive a lot of helpful information and support.

'It was only later I discovered the bullying and humiliation she had been subjected to.'

(Video: Barbara del Arbol)

What Teachers Can Do

Pauline Cogan, Dip.Rem.Ed, M.Sc (Neurolinguistics)

'...it's the ordinary classroom teacher who is in the front line of defence against the damage done to young lives by dyslexia. At present they receive little or no training in the symptoms and management of the condition. Yet unless teachers are on the watch for the warning signs, the children at risk will never get referred for diagnosis.'

(Video commentary)

In the European setting, children will be confronted with various teaching styles and they will have to adapt to different expectations of teachers from different cultures.

Bear in mind that dyslexia can be masked by the normal problems caused for many children by bilingualism and constant change of school.

- Make it clear from the outset what your expectations are. For example, is it acceptable for the child to ask questions during the lesson? Are your directions understood?
- Dyslexic pupils can succeed at school – they just need different kinds of teaching.
- Be positive and constructive.
- Recognise the child with specific learning difficulties may take up to three times longer to learn and will tire quickly.
- 'Labelling is disabling' (Richard Lavoie, see www.ditt-online.org under 'Tools & Technologies') when you label the person rather than the behaviour. Do not call the student stupid or lazy, and do not use sarcasm. This will defeat your educational purpose and may have a lasting negative effect on the child and his performance.
- Ensure that the educational environment is structured, predictable and orderly: children with learning difficulties respond most favourably in this setting.
- You will not motivate the child with specific learning difficulties with bribes or threats or appeals to 'try harder.' This will not improve performance when what is needed is clearer input, maybe at a slower speed, or with repetition.
- Accentuate children's abilities and teach through their strengths.

Facts about dyslexia

Teachers should know that:

- The problems associated with dyslexia are roughly similar in some 10% of the population.
- This holds across all countries and languages.
- The dyslexia group is one of the largest single disability groups of all.
- Until recently research findings showed a strong gender bias (four times more males appeared to suffer from dyslexia). More recent research shows that dyslexia occurs equally in males and females.

- There is a genetic link.
- While most dyslexia is developmental in nature, it can also be acquired due to brain trauma or disease.
- Dyslexia is a syndrome manifesting a constellation of many of the following characteristics:
 - discrepancy between general ability and performance
 - difficulties in visual and/or auditory discrimination
 - difficulties in phonemic identification and discrimination
 - difficulties in acquisition and use of word recognition with text: reading, spelling and writing difficulties
 - difficulties in comprehending what has been decoded
 - difficulties in writing in spite of acceptable reading levels
 - history of early language acquisition problems, and poor phonological development
 - deficits in working (short-term) memory for auditory and/or visual material
 - phonological processing deficits – for encoding and decoding (use and retrieval)
 - sensory-motor integration difficulties
 - sensory-motor co-ordination problems
 - auditory and/or visual sequencing problems
 - uneven brain function showing deficits in some areas and strengths in other areas (such as in art, drawing, physical education, 3-D construction)
 - self-management and organisation problems
 - organisation problems in academic areas, particularly relating to written language and especially paragraphs and essay writing conventions
 - algorithm and procedural problems in mathematical operations.
- There is a characteristic dyslexic profile as seen, for example, in the 'ACID' profile (weakness in Arithmetic, Coding, Information and Digit) of the Wechsler Verbal and Non-Verbal Tests.
- Dyslexia may affect some or all subject areas of the curriculum including:
 - mathematical operations and understanding
 - technical graphics
 - mechanical drawing
 - science and social studies
 - second language learning
 - vocational subjects such as metal and woodwork and domestic science
 - music.
- There may sometimes be exceptional strengths, often in art, sport or technical subjects.

The causes of learning difficulties or delay in readiness to learn

In the event of a manifest learning difficulty, teachers should understand that it may due to:

- general and/or specific low-cognitive ability
- physical disability (including sensory deficits, e.g. deafness)
- emotional problems
- psychoses
- socio-economic factors and cycles of disadvantage
- multilingualism
- culture shock
- environmental factors such as inconstant home care and/or parental illness
- specific learning difficulties.

Background reading guidelines

Teachers should:

- Read about the background to the identification and understanding of dyslexia in their own and other countries.
- Read about early case studies in 'word blindness.'
- Read papers on the formulation and evolution of good teaching practice for addressing the needs of dyslexics.
- Learn about definitions of dyslexia from the neurological, psychological and educational angles.
- Learn of the cluster of characteristics in the dyslexic syndrome.
- Be aware that dyslexia has neurological, biological, microbiological, cognitive, behavioural, psychological and educational implications.

Allied conditions

Be aware of allied conditions (see www.ditt-online.org – 'Contacts') such as:

- Attention Deficit Disorder (ADD)
- Attention Deficit Disorder with Hyperactivity (ADHD)
- Hyperactivity
- Hypoactivity
- Aphasia
- Dysphasia
- Specific Learning Impairment

- Dysgraphia
- Dyscalculia
- Dyspraxia
- Behavioural disorders
- Secondary emotional disorders.

Required knowledge of normal development

Be aware of normal child development at the level of:

- brain functional systems
- brain laterality
- brain hemisphericity
- sensory development and integration
- perceptual and cognitive development
- fine and gross motor development
- expressive (oral) language acquisition
- written language acquisition – decoding and encoding
- short (working) and long-term memory
- self-image and self-esteem
- motivation
- attention allocation and concentration duration limits
- bilingualism and multilingualism
- culture ethnicity.

Recommended personal skills development for teachers

Be aware of the need for personal skills development during your educational career through:

- on-going education and research
- assertiveness training
- counselling courses
- communication training, public speaking and presentation
- observation training
- assessment and test administration
- report writing skills
- personal and time management effectiveness
- inter-professional communication skills.

'If you keep telling someone they're stupid, eventually they will come to believe they ARE stupid.'

(Video: Barbara del Arbol)

'If I'd had special teaching from the beginning, I would have saved a lot of time, because I didn't really learn anything until I had special teaching.'

If they'd noticed I was dyslexic from the start, I wouldn't have had to go through what I did – all the humiliation from the teachers and the other kids.'

(Video: Elena del Arbol)

The dyslexic child in the primary classroom

Be aware that there may be a dyslexic child in your class in primary school. You should:

- get an explanation of the problems encountered by the dyslexic child in the primary curriculum
- recognise that skilled targeted teaching, using structured multi-sensory methods, can help
- recognise the frustration felt by the dyslexic student
- recognise that performance may be well below the student's potential
- recognise possible behavioural/self-esteem problems
- show sympathy, concern and understanding
- develop a good teacher-student rapport
- develop a good teacher-parent rapport
- remember this child learns in a different way but can learn
- look out for the student who may read well and contribute orally but who shows huge gaps between these verbal skills and written work
- see that the peer group understands the nature of dyslexia so that the child is not mocked or bullied
- actively encourage the child and point out skills and talents
- assign a responsible child to take care of the new dyslexic child in the class.

The dyslexic child in the secondary classroom

Be aware that there may be a dyslexic student in your class in secondary school. You should

- get an explanation of the problems encountered by the dyslexic adolescent in the secondary school curriculum
- recognise that skilled multi-sensory teaching can help
- recognise the compounded frustration problems felt by the dyslexic teenager
- remember the dyslexic student learns in a different way
- recognise that there may be attendant self-esteem problems
- recognise that there may be attendant behaviour or truancy problems
- recognise that there probably is a performance/potential gap
- show sympathy, concern and understanding
- use diagrams and mind-maps when teaching

- appoint a mentor-teacher for each dyslexic student – mentors should prevent assignment overload and liaise with specialist teachers
- develop a good pupil-teacher relationship
- develop a good home-school relationship
- ensure students' legal rights are adhered to in respect of teaching and examination provision such as rest breaks, extra time, reader provision, etc.
- be aware that a dyslexic may be undiagnosed as late as secondary school
- be aware that compensatory strategies which the (un)diagnosed student evolved at the elementary level may be inadequate for the more complex and multi-faceted secondary school curriculum
- be aware that remedial materials should be relevant to the maturity, not the academic level of the student
- give the dyslexic clear notes on lesson plans to reinforce the chances of learning the material that is being taught
- be aware that dyslexic children do have problems reading an unseen text aloud in class – asking them to do this can ruin their self-esteem
- ensure that your teaching is carefully structured to prevent failure.

The dyslexic student at university

Be aware that there may be a dyslexic student in your university/college class. You should:

- be aware that he or she learns in a different way from the conventional ways
- get an explanation of problems encountered by the dyslexic student at college, especially in relation to:
 - self-management
 - organisation
 - note-taking
 - time management
 - project and assignment management
 - uni-dimensional teaching (the talking head)
- recognise the frustration felt by the dyslexic college student
- recognise that college grades may be well below potential
- recognise self-esteem/depression problems
- show sympathy, concern and understanding
- offer to be or appoint a mentor/note-taker
- use clear diagrams and mind-maps when teaching
- be a good listener and give drop-in and counselling time

Techniques for teaching children with dyslexia include:

- *multi-sensory teaching – using touch, movement, and colour as learning channels in addition to hearing and sight*
- *repeating and reinforcing new information several times before moving on. This is known as ‘overlearning’*
- *helping children to do what they can – and praising them when they succeed – rather than putting them in situations where they will fail*
- *and use of computers to help dyslexic children over the hurdle of producing text.*

(Video graphic)

- help orchestrate and space out student assignments
- assign projects with time-draft requirements (e.g., first copy of 1st chapter to be handed in by date x – second draft by date y – final copy by date z) and so on for each chapter assignment
- provide copies of overhead projector or lecture notes to the dyslexic student or even all the students
- indicate required reading on reading lists
- ensure the students’ legal rights are adhered to in examination provision with respect to extra time, rest periods, readers, use of lap-top computers, etc.
- help students fill in forms and apply for their entitlements
- insist on building up strengths.

Teacher training courses for specific learning difficulties

Be aware of the possibility of training opportunities – courses in the teaching and management of dyslexia (SLD/SpLD).

Student teachers

- should look out for core courses in teaching and good practice techniques to address the needs of dyslexic students across a range of age groups
- must be taught to recognise what are normal stages of a child’s development and readiness to learn before they are expected to recognise what is not normal, i.e. dyslexia.

Previously trained teachers should take advantage of:

- in-service training of class and specialist teachers
- correspondence and other distance-learning courses
- back-to-college courses
- secondment to schools for dyslexic students
- in-house study groups.

All training courses should afford practice for a specified time in:

- administering first-level tests as required
- drawing up an individualised educational programme (IEP) for each dyslexic student
- note-taking
- observational techniques
- record-keeping
- drawing up short- and long-term objectives
- teaching methods
- choosing materials and texts.

Teacher training courses should stress:

- the relationship between oral and written language
- phoneme/grapheme correspondence
- phonemic structure
- spelling rules
- syntax
- semantics
- the reading process from
 - the top-down (holistic methods)
 - bottom-up (phonic methods)
 - interactive models of the reading process
- the implications of these models of the reading process for reading difficulties and remedial intervention
- written language style from the perspectives of:
 - history and evolution of written language
 - structure, temporal sequencing and semantics
 - developing word recognition skills
 - developing reading accuracy, fluency speed and literal and inferential comprehension
 - developing spelling skills
 - learning spelling rules
 - developing cursive handwriting skills
 - the pre-writing process, followed by composition skills
 - developing and increasing functional writing speed
 - various learning and teaching styles from the perspectives of identification, matching, and adapting teaching style to the learner's style.

'One of the words that often crops up when people talk about teaching dyslexics is the word multi-sensory, in other words, trying to present information through more than one channel. If you can make it so that children can have some visual input (that they see the information) – and some hearing input, and some kinaesthetic – feeling or tactile – input as well... then you are increasing the chances of the learning going into the brain.'

(Video: Dr Steve Chinn)

Teachers in training should know that:

- the curriculum as a whole may create difficulties for the dyslexic
- the curriculum should be adapted to suit the dyslexic's needs
- textbooks and materials should be selected and/or adapted with the dyslexic in mind
- teaching methods should be specially adapted and multi-sensory in nature to reach all students, especially the dyslexic student
- in particular, a cumulative, highly structured, sequential, multi-sensory approach is needed
- learning is best when brought through the modalities of hearing, sight, touch and movement
- development of fine and gross motor skills alongside multi-sensory teaching is best
- a 'mini-max' technique is best – take minimal steps for maximum practice and effect
- the development and application of short-term (working) memory and various kinds of long-term memory – semantic,

episodic and procedural – are essential for attention, storage, cross-referencing and retrieval of information.

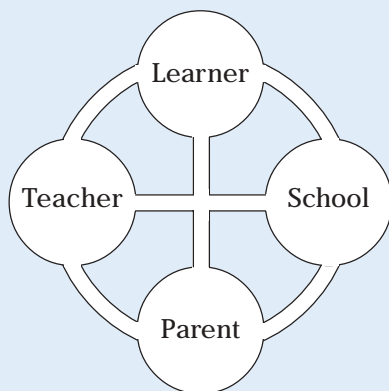
To obtain information on teacher training courses for teachers of dyslexic children:

- apply to your Ministry of Education
- apply to your National Dyslexia Association (see www.ditt-online.org – ‘State provision’)
- contact the European Dyslexia Association (see www.ditt-online.org – ‘Contacts’)
- access information regarding dyslexia on the Internet. Many organisations now have Web sites (see www.ditt-online.org – ‘State provision’).

Dyslexia and Information Technology

The power of IT may be harnessed to enhance a dyslexic’s performance by fostering:

- keyboard and word processing skills
- use of spell-check software
- use of IT as an aid to learning
- use of commercial software for teaching materials.



Channels of communication must be opened & maintained

Parent-teacher-school transparency awareness

Be aware of the need for parent-teacher-school transparency in treating and managing the dyslexic student:

- information and school records should be passed on in good time
 - when a child is in transition from one **teacher** to another
 - when a child is in transition from one **year** to another
 - when a child is in transition from one school or **country** to another.

Assessment and the teacher of the dyslexic student

First-level assessment

When a teacher suspects that a child is having learning problems, he or she should assess the child at the class level first by one of the methods listed below.

'I think what really breaks my heart is that dyslexic children have to wait until their face is totally pushed into the floor, no self-esteem at all, before they are properly diagnosed.'

(Video: Barbara del Arbol)

'...be on the look-out for the child who is badly organised, who has low self-image, who is not happy in school.

...look out for the child with a poor short-term memory: if you give them a number of instructions, they may only remember the first one and forget the rest.

And certainly be on the look-out for the child who's having difficulties with writing and spelling, and probably with reading – but certainly spelling.

These are the children you should be worried about.'

(Video: Pauline Cogan)

- **Cognitive testing** – some tests for literacy/numeracy problem identification are available to teachers and other professionals. Other tests are restricted to use by educational psychologists.
- **Attainment testing** – standardised group and individual tests of literacy/numeracy are available in most countries.
- **Informal testing** – methods include criterion or referenced tests, and miscue analysis.

Referral and second-level assessment

When the teacher is fairly sure there is a problem the child is referred via the family doctor or directly to an educational psychologist, who will make a second-level assessment.

- **Cognitive testing** (tests restricted to use by educational psychologists) will be done, after which a cognitive profile will be drawn up and the child may be referred to the other professionals involved in treating dyslexics, such as:
 - general practitioners
 - ophthalmologists/optometrists
 - audiologists
 - ear, nose and throat (ENT) specialists
 - speech and language therapists
 - occupational therapists
 - psychomotor therapists
 - teachers specially trained in dealing with dyslexia.

Teachers should understand:

- the purpose of psychological reports
- the interpretation of psychological reports
- the terminology of the reports
- the recommendations and applications of the psychological report, so they can construct targeted, structured, multi-sensory teaching.

Intervention and treating the dyslexic student's needs

There are many possible kinds of interventions following cognitive assessment:

- medical intervention
- chiropractic exercises
- sensory, perceptual, motor or proprioceptive therapy
- direct behavioural intervention
- precision teaching
- cognitive approaches to teaching
- multi-modal teaching

'It was very frustrating. I couldn't seem to write or read a sentence properly. I couldn't comprehend it. It took much longer to learn things. I used to work much harder than the other kids. I couldn't seem to learn, I couldn't seem to write properly and all the other kids could. I never really understood why. I just thought I was stupid.'

(Video: Elena del Arbol)

'The teachers used to tell me to go to the blackboard and spell and they would humiliate me in front of the class and they would all laugh.... That happened a lot because they thought I was lazy. They used to pick me out and make me read because they thought this would make me work harder.'

(Video: Elena del Arbol)

- sequential, cumulative multi-sensory teaching with multi-sensory materials and software
- phonic and visual whole-word learning techniques
- phonemic awareness approaches
- phoneme-grapheme correspondence
- cumulative and highly structured language teaching approaches
- home-school programmes for emotional and learning/teaching support for parents and students
- development of non-threatening games and play which facilitate learning for the wider family
- emotional, educational and socio-cultural support for dyslexic parents

Teachers must know how to develop strategies to enhance learning in the following sub-skill areas:

- attention and concentration
- metacognition (knowing what you don't or do know)
- self-esteem
- interpersonal skills
- social skills and rules
- motivation
- speech and language
- visual and auditory sequencing
- visual and auditory processing
- working (short-term) memory
- episodic, procedural and semantic memory
- sequencing
- directionality and orientation
- visual motor skills
- gross and fine motor skills
- organisation of self, environment and thinking skills.

Good practice

- Recognise the child's individual style of thinking.
- Help the child to succeed. Avoid failure, be constructive and positive. Praise helps boost flagging self-esteem.
- Encourage the use of computers to help the child get over the hurdle of producing text, but remember that not all children relate to technology.
- Be aware of and responsive to difficulties – know the child.

'He's making progress at school, though it's a slow process, and he's a changed boy because he knows he's succeeding and that his problems are being understood.'

(Video: Corinne Momaerts)

- Structure lessons to meet needs; for example, break the time down into different activities.
- Provide 'scaffolding' (educational aids) for the child and progressively remove them as he or she becomes able to cope without them.
- Check the readability of all texts. Consider offering alternatives, such as voice output software and audio tapes.
- Build up a bank of resources for the child. He or she will not be your last dyslexic pupil and you will be more prepared for the next.
- Adopt a multidisciplinary approach and work closely with everyone involved in the child's education. Be prepared to learn from colleagues with special expertise (educational psychologists, special needs teachers) and from parents.
- Provide a tutor specially trained to teach children with dyslexia to work alongside the child and/or a 'big brother.'
- Wherever possible, foster links with a centre of excellence where research into dyslexia is being carried out. This will help keep you abreast of all the new developments in the field and thus benefit the dyslexic children in your school. (See 'The Brain and Dyslexia': What intervention is appropriate?)

What Schools Can Do

D.I.T.T Member

'It is the school's job to teach the child with specific learning difficulties the techniques of compensation so that he or she can cope in the mainstream school with the proper chance of success.'

(Video: Mr Vercruyse, School Head)

Mainstream international schools that carry out **policies of integration and equal opportunities** whilst at the same time offering final examinations at a high academic level are faced with a dilemma. On the one hand the school has to accept children of all levels of ability with the aim of developing the potential of each child evenly, but on the other hand the qualifying examination is likely to be beyond the grasp of a whole sector of children with learning difficulties, including those dyslexic pupils who have not been taught the necessary strategies for coping.

But still the responsibility for preventing 'school failures' lies squarely on the shoulders of the school. Failure creeps in with behaviour labelled 'disruptive,' 'lazy' and 'uncooperative.' These labels attach too easily to the dyslexic learner who is not succeeding in coping with the written word. Once children accept these labels as part of their identity and lose their self-esteem at school, they become vulnerable. All too easily they find themselves involved in antisocial or even criminal behaviour outside school. This phenomenon is well documented.

So what are the solutions – apart from broadening the curriculum to include technical and vocational subjects, and offering a wide range of qualifying examinations to allow each pupil a chance of success? How can schools face the challenge of preventing failure and realising the potential of their dyslexic students? What can be done at management and organisational level?

The following measures should always be considered:

- Improving the flow of **information** between the school and the community, so that the learner and parent fully understand the extent and limitations of what the school offers. A simple one-page sheet of information outlining school policy, its practices and procedures, could be given to parents and learners to use as a point of reference.
- Setting aside regular scheduled **time** for consultations between school, specialised staff, the dyslexic learner and the family, to allow a collaborative, co-operative joint approach to reach solutions.
- Regular **training** for all concerned.

Training

Induction:

A teacher training pack, such as the *Language Shock Multimedia Training Pack*, of which this guide is a part, covering

- recognition of the symptoms of dyslexia
- how to adapt teaching methods to address different styles of learning
- understanding culture shock and

'School heads should be aware that students with specific learning difficulties, constantly faced with the written word will underperform:

- their self-worth falls
- their peers will underrate them
- their teachers will think of them as slow, lazy, obstructive or stupid
- the effect on self-esteem will be quite devastating.'

(Video: Dr Steve Chinn)

- the implications for children taking on new languages should be made available to every subject teacher before he or she starts to teach any class in a mainstream international school. New staff might be linked to a mentor or experienced specialist member of staff to discuss issues raised.

In-service:

At least one half-day of training should be set aside per term to focus on:

- how to recognise the symptoms of specific learning difficulties and adapt teaching methods
- exchange of information on latest research findings.
- good practice and different cultural approaches and styles.

Staffing

To provide equal opportunity for children facing learning difficulties, staff with appropriate qualifications must be recruited. Expertise is required from the specialised educational psychologist and/or speech therapist for a full initial assessment.

- The following members of staff may all be involved in the follow-up teaching programme:
 - school educational psychologist
 - special education adviser, special education or qualified dyslexia-trained teacher
 - resource centre tutor who can make appropriate back-up teaching materials available
 - class teacher, classroom assistant or personal tutor.

The school inspectors should also be consulted.

Allowing time – becoming cost-effective

Well-targeted regular intervention by qualified staff will eventually save time and money for all concerned.

Channels of communication must be kept open between the professionals at regular re-assessment meetings, to ensure goals are met and that current rights are respected (for example, extra time to complete examinations, and access to a lap-top computer).

For dyslexic learners, who may take three times longer to study a given piece of work, it is important to assign time for extra help when they are not tired out or having to miss the subjects at which they may well succeed, such as sport or art.

Children's Rights

*Equal Opportunities in Education throughout Europe
for Children with Learning Difficulties*

Revised by Susan Cummings

Children have the right to say what they think about anything that affects them. They have the right to express how they think and feel so long as by doing so they do not break the law or affect other people's rights. What they say must be listened to carefully.

*(Articles 12 and 13,
United Nations Convention on
The Rights of the Child, 1989)*

Article 29 describes the need to:

- develop the child's personality, talents, mental and physical abilities to their fullest potential;*
- prepare the child for a responsible life in a free society;*
- develop respect for the child's parents, cultural identity, language and values, as well as for the culture and value of others.*

*(Article 29,
United Nations Convention on
The Rights of the Child, 1989)*

At national level, the child's rights may be clearly stated in an Education Act. In some countries an Education Act will make reference to educational needs. Parents may have the right of appeal through a special needs education panel if they feel their child's requirements are not being adequately met in school.

For children with learning difficulties who are living in a Member State other than their own, or who have parents of different nationalities, the picture is less clear. In reality education in the child's mother tongue may only be available in the private sector.

In some circumstances, providing the appropriate education for a child with learning difficulties can come down to a question of pure economics: can the parents afford it?

Organisation of learning support varies from one Member State to another and surveys on special education are published by the European Commission (See www.ditt-online.org - 'Tools & Technologies' - Web sites and Publications - Eurydice). But children with learning difficulties who are being integrated into the mainstream system will usually have to follow a course of supplementary support tuition after school in order to keep up with their peers. This may not always be available as of right in the school itself.

Fundamental rights are being addressed by Member States, which should lead to more reciprocal arrangements between the countries concerned, and the better alignment of educational provision to benefit all children as they move around the European Union. Meanwhile the United Nations Convention, signed and ratified by 191 countries, remains the main instrument for children's rights in the European Union. Wherever these rights are not being respected, the Ministries concerned, Members of Parliament, local councillors or children's organisations should be contacted individually or through a lobby group.

In 1992, the European Parliament passed a resolution on a European Charter of Rights of the Child based on the United Nations Convention. It covered a wide range of issues including equal opportunities in education and social security, but as a Resolution it does not have the force of law. Further information can be obtained from the European Forum for Child Welfare (EFCW) publications, including *Chronology of the Legal Evolution of Children's Rights* by Massimo Toschi, and *European Children's Rights: An Overview of Law, Policy and Practice* by Nicola Wyld. (See www.ditt-online.org - 'Contacts'.)

Other European organisations which monitor or otherwise take an interest in children's rights in Europe include the Council of Europe

The United Nations Convention on The Rights of the Child (1989) states the need to:

- *make primary education compulsory and free to all;*
- *encourage the development of different forms of secondary education;*
- *make educational and vocational information available and accessible to all children;*
- *take measures to encourage regular school attendance and reduce drop-out rates.*

(Article 28, United Nations Convention on The Rights of the Child, 1989)

and UNESCO. European Citizen Action Service (ECAS), a unique, Brussels-based information and advocacy service, is concerned with the promotion of rights and has published a *Guide to your Rights in Europe*, with sections on the 'Family and the Education of your Children, Health for Travellers, Social Security' and 'Defending your Rights.' The European Parents Association (EPA) is an organisation in the service of parents and pupils which aims to build the European Union of Education. In addition to producing information bulletins, EPA has published a 'Charter of Rights and Responsibilities of Parents in Europe' and 'Rita Schwark – Her Fight Against Dyslexia' (for addresses of these organisations and others, see www.ditt-online.org – 'Contacts').

Dyslexia International – Tools and Technologies will continue to lobby on behalf of children with learning difficulties whose families are on the move:

- for the right to be educated in the mother tongue when learning a second language is beyond a child's capabilities
- for access to an appropriate education, through:
 - on-the-spot provision by the host country, and
 - reciprocal schooling arrangements between Member States
- for classroom aid/assistance to be made available (when a child is capable of integrating into the local mainstream or special education system in a new language)
- for access to counselling and advocacy to make the process of integration smooth and effective
- for teachers, professionals and parents to have access to training programmes and exchange of ideas on methods, materials and good practice across the European Union
- for training in the recognition of children's learning difficulties and in the appropriate methodology to be an obligatory part of all teacher training programmes
- for information on rights and facilities to be made available to the parents of children with learning difficulties who are on the move in the European Union.