

Insights, Innovations and Initiatives
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1. Insights

The field of dyslexia has benefited from considerable developments in research and practice for some time now. While there are still a number of controversies and areas of confusion there is evidence of greater awareness of dyslexia and a greater consensus how dyslexia should be identified and dealt with in the classroom.

Understanding Dyslexia - some key points:

- Dyslexia can be seen within a continuum from mild to severe.
- Dyslexia is a term that can be easily misunderstood.
- The degree, and the impact of dyslexia on a child can vary according to the nature of the task and the nature of the learning context.
- Early identification is important for effective intervention.
- Children with dyslexia can show different characteristics and therefore their needs should be addressed on an individual basis.
- Although the principal difficulties associated with dyslexia relate to literacy - reading, writing and spelling, children with dyslexia can also show other difficulties relating to memory, co-ordination and organisation.
- It is important to identify and recognise the strengths shown by children with dyslexia and to attempt to incorporate these strengths into a teaching programme.
- Knowledge on how children learn, and how to make learning more effective through for example, study skills, can be extremely beneficial for children with dyslexia.
- It is important also to consider the role of the curriculum and processes involving differentiation and learning styles as these can help children with dyslexia understand the task more clearly and undertake learning more effectively.
- Dyslexia will not be 'cured,' it is a lifelong condition, but the effects of dyslexia can be minimised with effective teaching intervention and adaptations to tasks, through differentiation in the curriculum and accommodations in the workplace.

- The dyslexic person may have many strengths and these strengths may be used to compensate for his/her difficulties.
- it is important to recognise the need to boost the self-esteem of children and adults with dyslexia as it is too easy for them to become discouraged and lose interest in learning.

Definitions of Dyslexia - Research and Practice

There are many definitions of dyslexia. It is important however that a definition can provide some insights for teachers and parents and provide the necessary guidance to indicate the nature of the difficulties and the means of dealing with these. It is necessary therefore to operationalise a definition to make it useful for practitioners and parents.

An example of an operational definition can be seen in the East Renfrewshire Education Authority policy documentation on dyslexia. The definition used by this education authority is similar to that provided by the BDA (Peer 2001) but it is developed through criteria based on identification in the early stages, assessment including a stepped process of identification and assessment and the range of support in terms of strategies and provision. Essentially the rationale behind this process is preventative. It is suggested that dyslexia should be re-conceptualised in terms, not of definitions but of preventative and descriptive criteria and a multidisciplinary working framework for intervention. This implies that dyslexic or not, the support will be there at an early stage with ongoing consultancy with relevant professionals and ongoing monitoring by teachers and the education authority.

Definitions- Key aspects

A working/operational definition of dyslexia therefore needs to recognise the following:

- **processing style** - this can highlight the differences between individuals including those with a dyslexic profile. It is important to recognise these processing differences in the development of teaching and curricular approaches.
- **problem solving skills** - it is important that students with dyslexia are not limited on account of their severe difficulties, in literacy. It is crucial that access to problem solving activities are prioritised as well as literacy. Dyslexia should not limit the learning potential of the individual, indeed there is evidence that in some areas of the curriculum, such as those which require visual, creative and problem solving activities, students with dyslexia may be at an advantage.
- **difficulties in phonological processing** - it needs to be acknowledged that many students with dyslexia will experience difficulties in phonological processing and that this will have implications for how reading is taught. This needs to be considered in an operational definition. The implication is that a range of teaching procedures for literacy needs to be considered and that it needs to be appreciated that one approach will not suit all students with dyslexia.
- **discrepancies in performances** in different areas of the curriculum. This can be readily noted and acknowledged. It is important that students with dyslexia are able to capitalise on their skills as this can have a transfer effect to other areas and additionally provide a very necessary boost to self-esteem.
- **observable behaviours** - these are the characteristics which are often detailed in descriptive definitions of dyslexia. Again it is important to acknowledge the strengths as well as the difficulties associated with dyslexia. But a detail of these characteristics

should also relate to the learning context and these can be useful for both teachers and parents.

- **implications for specific contexts** - essentially dyslexia is contextual, this means that information needs to be gathered about the student in different learning contexts. These can include the classroom, different subjects, home, and the workplace - depending on the type of information that is required.

Based on this therefore, a suitable definition may be:

'dyslexia is a processing difference experienced by people of all ages, often characterised by difficulties in literacy, it can affect other cognitive areas such as memory, speed of processing, time management, co-ordination and directional aspects. There may be visual and phonological difficulties and there is usually some discrepancy in performances in different areas of learning, it is important that the individual differences and learning styles are acknowledged since these will effect outcomes of learning and assessment. It is also important to consider the learning and work context as the nature of the difficulties associated with dyslexia may well be more pronounced in some learning situations' (Reid 2003).

It is feasible therefore to suggest that while a definition can help to provide some guidance to teachers and researchers, the range of definitions in use may result in some confusion. Reid Lyon (2004) suggests that the negative consequences of inadequate definitions are serious as this can result in lack of information on the precise nature of the reading difficulties and consequently lead to inadequate training for teachers.

In relation to research, Reid Lyon asserts that the lack of an appropriate definition has resulted in a reliance on exclusionary criteria and lack of a clear selection criteria for the sample being studied. He suggests that a definition must be governed by a theoretical view supported by substantial research and clinical evidence. This should be based on 'constructs' that can be measured directly and consistently and should provide clear indications of how to identify whether a person is dyslexic.

Conflicting perspectives

Fawcett (2002) suggests that one of the major tensions in dyslexia research has in fact been the range of potentially conflicting viewpoints. These viewpoints have emerged from "researchers and practitioners; parents and teachers; teachers and educational psychologists; schools and local education authorities; local education authorities and governments - all have different agendas, and much of the time this forces them into opposition".

Professional Involvement © (from Reid, G.(2004) Dyslexia: A Complete Guide for Parents (Wiley)

Professional	Function	Access
Educational Psychologist	Can administer intelligence tests and other restricted tests	can be through school or privately, need to ensure properly qualified eg in U.K. Directory of Chartered Psychologists can be consulted in local public library.
Specialist/ Support for Learning Teacher	Can administer specialised tests that have been developed for dyslexia. Will have knowledge of the implications of the results and	through school, although some specialist advice and assessment can be provided by voluntary and parent organisations

	what action to take	
Class teacher	Can contribute a great deal in terms of information gathered through observation. Will have a detailed knowledge of how the child performs in class and in different types of activities.	Through school and parents evenings
Occupational Therapist	Deals with movement and can diagnosis specific difficulties in co-ordination and motor control. Can develop and implement specific exercise based programmes,	Usually through medical sources or through school
Optometrist	Deals with visual difficulties, visual acuity, blurring of words when reading and general visual discomfort	Usually privately but school can be first call. Some opticians can provide this service
Speech and language therapist	Deals with all speech difficulties, articulation, comprehension and associated difficulties	Through school or medical
Audiometrician	Deals with hearing and discrimination of sounds	Usually through medical sources but school may also offer advice
Neuro-psychologist/clinical psychologist	Can provide insights if brain or birth trauma and can provide recommendations on programmes that do not necessarily have an educational focus.	Through medical referral
Occupational Psychologist	Can provide guidance on work based difficulties and recommendations and guidance on career potential and support	Through employment agencies/ employer

Assessment

There are a number of key issues and questions relating to identifying dyslexia that can cause some concern. These include:

- Who is responsible for identifying dyslexia?
- At what age can dyslexia be reliably identified?
- What is the difference between screening and formal assessment?
- How reliable are quick screening tests?
- What is the role of the class teacher in assessment?
- What role can parents play?
- How can we be sure it is dyslexia, and not some other learning difficulty?

There has been significant progress in many education authorities that have helped to address and to clarify these issues (Reid, Davidson-Petch, Deponio 2004), Reid 2004, Reid (in Press). One of the key developments has been the recognition of the insights that class teachers can provide in an assessment.

The role of the class teacher in assessment?

One of the key developments has been the increase in awareness of class teachers of dyslexia and the identification characteristics. There are a number of factors that the class teacher can observe at various stages within the classroom. These are detailed below:

Pre- school and Early years:

Concern may be raised if the child shows some or all of the following:

- Forgetfulness,
- speech difficulty,
- reversal of letters,
- difficulty remembering letters of the alphabet,
- difficulty remembering the sequence of letters of the alphabet,
- if there is a history of dyslexia in the family,
- co-ordination difficulties e.g. bumping into tables and chairs,
- tasks which require fine motor skills such as tying shoelaces,
- slow at reacting to some tasks,
- reluctance to concentrate on a task for a reasonable period of time,
- confusing words which sound similar,
- reluctance to go to school,
- signs of not enjoying school,
- reluctance to read,
- difficulty learning words and letters,
- difficulty with phonics (sounds),
- poor memory,
- co-ordination difficulties,
- losing items,
- difficulty forming letters,
- difficulty copying,
- difficulty colouring,
- poor organisation of materials.

Primary School

After around 2 years at school

- hesitant at reading therefore has poor reading fluency,
- poor word attack skills - difficulty decoding new words and breaking these words down into syllables,
- poor knowledge of the sounds of words,
- difficulty recognising where in words particular sounds come,
- spelling difficulty,
- substitution of words when reading for example 'bus' for 'car.'

Later stages in primary school

- as above, but also,
- behaviour difficulties,
- frustration,
- may show abilities in other areas of the curriculum apart from reading,
- attention and concentration difficulties.

Secondary

- as above and also,
- takes a long time over homework,
- misreads words,
- relies on others to tell him/her information,
- poor general knowledge,
- takes longer than others in most in the class on written tasks,
- may not write a lot in comparison to his/her knowledge on the subject,
- difficulty copying form books,
- may spend a great deal of time studying with little obvious benefit,
- may not finish class work or examinations because runs out of time,
- there may be as degree of unhappiness because of difficulties in school that may manifest itself in other areas.

It is important that professionals within the school liaise in identification and assessment as the difficulties may take on a different form in different stages of education. Communication is vitally important in both the identification and the support of the child. Additionally communication between home and school is also extremely vital.

Assessment should not be the responsibility of one individual teacher or psychologist, but it should be a shared responsibility that includes all the professionals involved with the child; including the school management and also of course, the parents. Assessment is an interactive process between parents, teachers and psychologists. This interactive process should make it possible to ascertain if the child has dyslexic difficulties and any diagnosis will utilise information from a number of people.

Parents' Perspectives

Reid (2004) conducted a web based study of parents perspectives on how they dealt with the challenges associated with dyslexia.

One of the parents who responded found that the main challenges in parenting a child with dyslexia included:

- helping to maintain the child's self-esteem,
- helping the child start new work when he/she had not consolidated previous work,
- protecting the dignity of the child when dealing with professionals/therapists,
- personal organisation of the child,
- peer insensitivity,
- misconceptions of dyslexia.

This response is interesting because it touches on some of the key areas, particularly the emotional aspect of dyslexia. It also relates to the misunderstandings and misconceptions that many can have of dyslexia.

Learning

How dyslexia affects children's learning:

The learning process can be described as dynamic one. This means that different parts of the brain interact with other parts and each relies on and interacts with the other. For example the various parts of the brain that deal with visual/auditory/memory/understanding/co-ordination may all be used simultaneously to tackle a task. It is often this simultaneous use of learning skills that is challenging for children with dyslexia. For that reason tasks need to be structured, simplified and preferably focussed towards the child's stronger areas of learning. Children with dyslexia are usually

stronger visually or kinaesthetically, as opposed to auditory. That means initial learning will be more meaningful if presented visually or through the experience of learning (kinaesthetic).

Kinaesthetic experiences can be helpful to re-inforce learning. Kinaesthetic means experiencing learning. So activities that involve drama and role playing, or investigation and enquiry activities, such as in a survey, interview or questionnaire all utilise kinaesthetic skills because each of these activities involves experiential learning.

Cognition

- Cognition is important for learning. This describes the actual processes involved in learning a piece of information. This relates to memory, understanding, organising and generally making sense of information. Often children with dyslexia have what can be described as cognitive difficulties. This includes memory and organising information and often these can be quite serious difficulties that the dyslexic child needs to overcome for effective learning. What is important however is that good teaching can help to overcome all of these cognitive difficulties. Much can be done to aid the child's memory, and assistance by the teacher to help the dyslexic child organise information can help him/her learn more effectively. The teacher can play a key role therefore in helping dyslexic children overcome cognitive difficulties.

Metacognition

- Cognition, as indicated above, means learning, metacognition means learning to learn. This implies that children can be taught to be more effective learners. This is very important for dyslexic children. The research indicates that children with dyslexia may be weak in metacognitive awareness and therefore have difficulty in knowing how to go about tackling a problem. This means they may not be sure on **how** to, for example, interpret a question or to work out the most efficient way of answering it, or in fact to remember any piece of information. The development of metacognitive skills can be aided by programmes that are essentially 'study skills' programmes. Often study skills are seen to be part of examination preparation, but in fact this is too late. Study skills, particularly for learners with dyslexia should be provided as young as possible. Becoming efficient in studying and learning helps the learner make connections between different pieces of information and this can help with transfer of learning and generally more efficient use of information. This will be discussed further in chapter 3.

Self-esteem

- Self-esteem is important for learning. A child will learn more effectively and will be more motivated to learn if his/her self-esteem is high. This is also very important for learners with dyslexia- Young children with dyslexia very soon after commencing formal education quickly realise that some aspects of school education, such as reading, spelling and writing are challenging for them. This can result in feelings of failure and frustration. This can lower the child's motivation and self-esteem in relation to learning. Effort needs to be made to ensure children with dyslexia are provided with opportunities to gain some success, as it is only through success that self-esteem will be enhanced. Activities such as circle time (Mosley 1996) can help to provide opportunities for enhancement of self-esteem.

2. Innovations

One factor that seems to characterise the field of dyslexia, and indeed other specific learning difficulties, is the incessant flow of innovative treatments that claim to promise a cure. These so-called 'cures' can be misleading. At the same time however, they should not be discounted and need to be examined seriously. One of the other characteristics about these innovations, or cures, is that they usually cost money and the target market is normally parents. Schools are unlikely to adopt a new approach if it has not been tried and tested.

Larry Silver made an interesting general comment on such innovations, in an article - 'Controversial Therapies'- in the International Dyslexia Association Perspectives periodical (Summer 2001). Silver suggested that understandably parents of children with learning disabilities are susceptible to anyone offering a treatment approach that will 'cure' or 'correct' the problems, often in a brief period of time'. The interesting point is that although these treatments are seen by professionals as controversial, the people offering these treatments are usually very busy with many clients. This indicates that parents will pay money if they think a treatment can offer them, and their child, something that the school cannot provide and promise an end to the difficulties associated-with dyslexia.

These 'treatments' are controversial because usually any new approach goes through a process of implementation, evaluation, revision and re-evaluation and the results of these developments are usually written up in respectable, academic peer reviewed journals. This means that when a research exercise on a new approach is concluded the researchers send a report in the form of an academic article to a journal for publication. The journal editors then send it to several other academics working in the same field for comment. The journal editors are seeking advice on whether the submission reaches the academic standards of the journal and particularly if the research has been soundly and rigorously carried out. This peer review is standard practice and many of the innovations and cures around today have not been peer reviewed in this way. Usually the practice of accepting a new idea is slow and can take many years as it has to go through this rigorous research and peer review process. Some of the new cures are based, initially at least, on an individual's 'hunch' and these may be reported in newspapers capturing usually sensational headlines and a large potential audience. When this happens parents often want more information on these cures. They would normally seek information from the source of the innovation because often the school will not have knowledge of these 'cures.' Education authorities tend to use only those methods that have been tried and tested.

Alternative approaches and treatments

Visual Approaches

There are a number of different visual treatments that have been specifically marketed for treating dyslexia. Most are commercially operated and run by private companies although some have close links with universities and other research establishments. Scotopic Sensitivity, This term was first used in 1983 when Helen Irlen presented a paper on Scotopic Sensitivity Syndrome at the annual meeting of the American Psychological Association. She proposed that tinted glasses would improve the reading ability of dyslexic children and following that paper the treatment became popularised and sensationalised before there was time for sufficient control studies to be carried out to verify the claims (Silver 2001). Scotopic sensitivity, which is now more commonly referred to as Meares-Irlen Syndrome, refers to the presence of a visual defect that can be

related to difficulties with light source, glare, wave length and black and white contrast Irlen in fact reported on a number of areas of difficulty, such as:

- Eye strain
- Poor visual resolution
- Reduced span of focus
- Impaired depth perception
- Poor sustained focus

The assessment procedures for the above are usually carded out though a screening process by people who have undergone courses to become screeners. Some optometrists also carry out such screening. During the screening the individual is asked a series of questions after being shown pages confining different patterns, musical notes, geometric figures and words. Observations are then made on how he/she responds to these. For example observations will be made on the length of concentration span, whether the figures jump, run off the page, merge and if vision is blurred when concentrating on complex visual images. The colour of any lenses that are prescribed are usually determined by the responses to these factors as well as some additional and more sophisticated laboratory procedures.

ChromaGen™

This system comprises of special filters designed for the management of visual dyslexia. ChromaGen™ however have produced extensive and very promising in-house studies using a larger amount of clients (Zeidan no date). This study refers to the results of the application of the ChromaGen Haplosopic filters to 434 dyslexic individuals. The author claims that there was a 91% success rate based on comparisons of both reading and writing skills from before the lenses and three months after continuous wear of the ChromaGen™ lenses. Similarly Harris and MacRow-Hill (1998) reported gains in colour vision and in rate of reading using ChromaGen™ contact lenses with young people with dyslexia.

Optim-eyesÔ

Jordan suggests that the best way of achieving the most comfortable colour is through the use of the Optim-eyes™ task light. This is a practical lamp that can be used for reading and writing, which has a flexible positioning. The light is designed to switch on and off individual colour receptors in the retina, this allows for the best balance between colours. Jordan does maintain however that a significant level of expertise is required from the person assessing the problem and applying the treatment. He advocates that for best results it should be used in conjunction with the Jordan Reversal and Inversion Test and the Jordan Pattern Glare Screening Test in order for the optimum colour balance to be set for each individual's needs.

Asfedic Tuning

The company called TintaVision have developed a sophisticated form of Asfedic Tuning. Asfedic is a condition of the visual system where the cells in the retina are not properly in tune and according to Irons (2004) this can result in a range of slight to severe difficulties in reading normal black on white text backgrounds. TintaVision have tested over 4,000 individuals in this way and Irons, the research director of the company, suggests that the expected outcome is an improvement in reading speed and reading accuracy. In the U.K. Asfedic Tuning is approved for use by the Students Support Division in Higher Education although it has not yet been extensively used in mainstream education. TintaVision

suggest that the use of Asfedic Filters and the colour co-ordinates for a few weeks produces a physical change in the eye and this change improves reading ability. It also means that the exact colour required for further improvement also changes and subsequent timing sessions should be seen as a 'top up'. The company suggests that in general people need around three tunings. (www.tintavision.com)

Fatty Acids and supplements

There is a very strong view- much of it arising from the research conducted by Richardson (2001) and others, that certain fatty acids play an important role in the development of the eye and brain co-ordination, in learning ability in concentration and in memory. They suggest there is now growing evidence on the important role of Highly Unsaturated Fatty Acids (H-UFA) of the Omega 3 and Omega 6 families. They report that about 30% of the dry weight of the eye and brain are made up of these vital nutrients. Furthermore they can only be obtained through dietary sources. They also suggest that the industrialisation of the food chain - with an extension to the shelf life of most foods - has resulted in the dietary removal of these nutrients. Some green leaf vegetables as well as nuts and seeds can provide the parent LNA omega -3 fatty acid which then has to be metabolised before it can be utilised by the body. The researchers suggest that fish oil supplements or oily fish and seafood can give a more direct input of these nutrients.

The latest research indicates that omega -3 is very important and trials in schools in Durham in the North of England (www.durhamtrial.org) show that the use of hi-EPA supplementation can improve the learning abilities of children with dyslexia, dyspraxia and ADHD. Dr. Madeleine Portwood lead author of the trial stated that "for some children on the trial we saw dramatic improvements in reading ability; as much as four or five years in some cases in terms of handwriting we also saw marked differences. Their confidence and self-esteem also improved and many of the children who were previously excitable and hyperactive found themselves able to concentrate" (Fatty Acids and Learning Conditions 2004 pg.6). The research also indicates that fatty acids delivered in their most natural bio-available form have greater efficacy than that processed or in synthetic form. Further the research also indicates that the right blend of omega-3 and omega 6 fatty acids has a positive effect on brain cell signalling.

Other dietary treatments

There are a number of other dietary and ingestive treatments that claim to have some success with people with learning difficulties. These can include megavitamin. and trace minerals, glyconutritional supplement and herbal remedies. There may well be some validity in these claims but if parents are considering using these with their children they should according to Arnold (2001) refer to the following factors:

- Is there research data comparing the treatment to a control condition?
- What is the age and diagnosis of the children who have responded to the treatment?
- What are the risks and expenses involved?

Additionally Arnold suggests that parents should try to log the results by rating the child's performances before and after the treatment in as objective a way as possible. He suggests that if results are not obvious after a reasonable period of time it may be wise to move on to another treatment.

It is also important to acknowledge that some treatments such as herbal remedies, should be tried only under supervision, or at least with your medical practitioners knowledge, especially if other drugs taken at the same time.

The Davis Dyslexia Correction Method ®

This method is an example of an approach that has been subjected to both heavy criticism and great acclaim at the same time. The approach is described in full in the book *The Gift of Dyslexia* by Ronald D. Davis which was first published in 1994. The two key aspects of this programme are symbol mastery and orientation/disorientation. Davis suggests that people with dyslexia experience disorientation from an early age and this disorientation in the brain affects the ability to read print. The other factor in the Davis method relates to symbol mastery -that is what the symbol looks like and what the symbol means. The difficulty according to Davis is that people with dyslexia think in pictures and symbol mastery infers verbal conceptualisation that implies the need to think with the sounds of language. He suggests in his book that we need to "keep in mind that dyslexics have little or no internal monologue, so they do not hear what they are reading unless they are reading aloud" (Davis 1997, pg. 12). It appears that the contrast between verbal and non-verbal conceptualisation that the dyslexic person experiences when reading can cause confusion and according to Davis this results in disorientation. This 'means that the perception of the symbols gets altered and becomes distorted so that reading and writing is difficult or impossible' (pg 14).

The intervention consists of an intensive programme carried out by individuals specifically trained in this method. The programme includes symbol mastery sessions, orientation counselling and spell-reading exercises. The programme also includes fine tuning exercises to help the individual find his/her optimum orientation point and co-ordination therapy. The book also contains a number of key words that can trigger disorientation.

Davis in the book defines dyslexia as 'a type of disorientation caused by a natural cognitive ability which can replace normal sensory perceptions with conceptualisations; reading, writing, speaking or directional difficulties which can stem from disorientations triggered by confusions regarding symbols. Dyslexia stems from a perceptual talent" (Davis 1997, pg 244).

Exercise and Movement

There has been a long standing interest in exercise and therapies based on movement for children with dyslexia and other specific learning difficulties. Doman and Delaeato (Tannock 1976) developed a series of exercises related to motor development this and has been developed considerably by Blythe (1992, 2001), Blythe and Goddard (2000), Goddard -Blythe and Hyland (1998), Dobie (1996) and McPhillips, Hepper and Mulhem (2000). Some of these are discussed below.

The inhibition of primitive reflexes

Blyth (1992) found that 85% of those children who have specific learning difficulties that do not respond to various classroom intervention strategies have a cluster of aberrant reflexes. He argues that as long as these reflexes remain undetected and uncorrected the educational problems will persist.

These reflexes should only be present in the very young baby and would become redundant after about six months of life. But if these reflexes continued to be present after that time, Blyth suggests, the development of the mature postural reflexes will be restricted and this will adversely affect writing, reading, spelling, copying, maths, attention and concentration.

Blythe (1992) and Goddard-Blyth (1996) have developed a programme -the Developmental Exercise Programme - an assessment and intervention programme for

assessing the presence of these reflexes, and a series of exercises designed to control the primitive reflexes and release the postural reflexes. This view regarding the affect of uninhibited primitive reflexes on learning has been supported by other studies. Details of this programme can be obtained from the Institute for Neuro-Physiological Psychology (INPP) www.inpp.org.uk.

The INPP have been responsible for pioneering research into NeuroDevelopmental delay (NDD) and its impact on specific learning difficulties including dyslexia, dyspraxia, ADD, ADHD and DAMP (Dysfunction of Attention, Motor, Perception). They have centres in many countries including Scotland, Ireland, Netherlands, Sweden, Germany, Finland and Italy.

Educational Kinesiology

Educational kinesiology is a combination of applied kinesiology and traditional learning theory, although some aspects of yoga and acupuncture are also evident in the recommended programme.

Kinesiology is the study of muscles and their functions and particular attention is paid to the patterns of reflex activity that link effective integration between sensory and motor responses. It has been argued (Mathews, 1993) that often children develop inappropriate patterns of responses to particular situations and that these can lock the child into inappropriate habits.

Dennison and Hargrove (1986) has produced a series of exercises (Brain Gym®) from which an individual programme can be devised for the child relating to the assessment. Many of these exercises include activities which involve crossing the mid line, such as writing a figure eight in the air or cross crawling and skip-a-cross, in which hands and legs sway from side to side. The aim is to achieve some form of body balance that information can flow freely and be processed readily. This programme known as brain gym ® has been widely successfully implemented in the school setting (Fox 1999 Longdon 2001, 2004, Taylor 1998). Dennison and Dennison (1989, revised 2000) developed a system called Brain Organisation Profile (BOP) to visually represent their theory. Taylor (2001) examined the basis and application of this profile with children with ADHD and was able to develop a useful brain organisation profile for each child in the research sample and found that children with ADHD did show more evidence of mixed laterality processing than in the control group.

Dyslexia, Dyspraxia, Attention Disorder Treatment (DDAT)

DDAT is the name given to the exercise based treatment (Dore Rutherford (2001) based on the cerebellar deficit (Nicolson, Fawcett and Dean 2001, Fawcett and Nicolson 2004). This theory implies that the cerebellum has an important function in relation to dyslexia and other learning difficulties. The treatment programme also implicates other aspects of neurological / biological development such as the functioning of the magnocellular system, the inhibition of primitive reflexes and fatty acid deficiencies.

Controlled studies which have sought to provide clinical evaluation of the DDAT treatment have been implemented and reported (Reynolds, Hambly and Nicolson (2003). These results however reported by Reynolds, Hambly and Nicolson are encouraging and indicated that after six months treatment the clients showed physiological changes with substantial improvements in vestibular function and visual tracking and improvements in fundamental cognitive skills.

In a commentary to this report in Dyslexia (May 2003) however Snowling and Hulme outlined what they considered were numerous methodological and statistical problems

with the study and concluded that it 'provides no evidence that DDAT is as effective form of treatment for children with reading difficulties' (Snowling and Hulme 2003, PB, 127). Stein in the same edition of the journal suggested that he believed that 'there is evidence to support the hypothesis that the development of the cerebellum is mildly impaired in dyslexics; hence their postural control, balance and eye control may be compromised and therefore treatment designed to improve these might help dyslexics' (Stein 2003 pg. 124-125). Stein goes on to say however that this study did not meet the gold standard set for scientific studies. This means that studies should be double blind and randomised with control groups. Despite this, and other critical comments made on the research paper (Singleton 2003), Nicolson and Reynolds (2003) suggest that their results are sound and indicate that 'they have undertaken all the further tests suggested by commentators and these have served merely to confirm the original pattern of results' (Nicolson and Reynolds 2003 pg 174).

There is no easy solution to the dilemmas faced by parents who have the means, and wish to do their best for their child. Certainly DDAT will work for some children but for others it may not -this is the risk attached to any intervention, particularly new ones. The wisdom of Tim Miles, a highly regarded and long standing figure in the dyslexia field is worth acknowledging when he says 'when I used to talk to worried parents, some of whom were willing to spend their last penny to help their dyslexic child and they enquired about a form of treatment which I believed to be controversial or dubious I did not actively discourage them, but I urged them and the child to be aware of possible disappointments if the treatment did not work' (Miles 2003 pg 122).

'Dyslexia in Scotland' (2002) found it necessary to send to all its members a special fact sheet on an alternative approach because of the questions raised by parents. This informative fact sheet did much to present the facts which clearly was what the parent and teacher members wished. An interesting and reflective comment however was made in the conclusion to the fact sheet by the authors, 'dyslexic adults we have spoken to don't want a cure they simply want an improvement in their literacy skills and their organisational skills. They do not want to lose their special gifts' (Dyslexia in Scotland 2002 pg 4).

3. Initiatives Practice

Research conducted by Reid, Davidson-Petch and Deponio (2004) in Scotland on policy and practice For dyslexia with a specific focus on the early years asked authorities to indicate examples of good practice. Twenty four authorities responded positively to this question indicating they had in place a procedure/resource that they considered to be good practice.

A selection of the responses are shown below.

- A Framework for Intervention Package
- Quality in-service and training
- The production of a CD-ROM involving children with Dyslexia and their parents
- Intensive Support for Reading Programme
- Voice recognition software initiatives
- InDirect Learning computer programme (IDL) (only authority in UK to provide this system in all mainstream primary and secondary schools. It is specifically designed for pupils with dyslexic type difficulties. The system is now available in all primary, schools and three secondary schools in the authority.

- 'Closing the Gap' project in conjunction with University of Glasgow and Early Intervention. Positive reported in the Times Educational Supplement (January 2004).
- Dyslexia advisors in all schools
- Summer school
- Educational Psychologist Network for SpLD/Dyslexia
- ICT assessment team with dyslexia focus
- Development of outreach programme and collaborative initiatives with cluster schools
- Pilot of nursery screening
- Parent and professional support group partnership
- Multi- agency training on language and literacy
- Literacy support serviced
- Clicker 4 training
- Early Screening project (p2-3) in use in over 75% of schools
- Authority-developed baseline assessment materials to evaluate Early Intervention Language Strategy also used in schools to screen and track entrants at P1-P3
- Early Intervention project
- Assessment framework including P1 and P2 screening packs
- Initiatives with PE staff
- Systematic use of paired reading
- Dyslexia Support Pack (staff development tool that can accommodate new good practice as it develops)
- Phonological awareness screening pilot
- Dyslexia network of teachers/EP's that meet termly to exchange views with the aim of developing a curricular dyslexia resource to be accessed via the intranet.
- Pupil Assessment Profile -a holistic representation of the child/young person involving a wide variety of professionals and personnel. This is a dynamic model of assessment that is tabled through staged intervention meetings
- Investigating Fast Forward Phonics ICT programme
- Dyslexia Support packs
- Use of the Special Needs Assessment Profile (SNAP) (Weedon and Reid 2003)
- ASPECTS training programme on hard and software for pupils with SpLD
- Elklan comes run with speech and language therapists for class teachers and assistants

There have also been initiatives in the development of policy frameworks in Scotland. Reid, Davidson-Petch and Deponio (2004) found that most authorities catered for dyslexia within their policy framework either through a dedicated policy on dyslexia, SpLD or through a more generic policy on learning.

Additionally most authorities translated the policy into guidelines. Twenty two examples of how this was done were noted. The titles of the guidelines included both generic titles, such as, 'Authority Support Pack' and 'Good Practice Guide' and dyslexia related titles, such as, 'Council Guidance On SpLD/Dyslexia' and 'Practice Guidelines for Dyslexia/SpLD.' There were thirteen such examples of guidance documents for teachers with SpLD/Dyslexia in the title.

Some policies were particularly informative. The following is an extract from the contents of the appendix to one such policy.

- *Appendix 2A strategies to help dyslexic children in school*

- *Appendix 3 checklist of early observations which may point to specific learning difficulties (dyslexia).*
- *Appendix 3A checklist of early indicators of dyslexia/reading difficulties at the early stage, of primary school*
- *Appendix 3B checklist of indicators of dyslexia at the later stages*

Concluding Comment

As research progresses and a greater understanding of the causal characteristics of dyslexia emerge; schools become increasingly accountable and legislation and inclusion extend the practice of equality in school and the workplace it is likely that further insights and initiatives in dyslexia will emerge. Innovations need to be set against that context -that is the current state of the research and the implications for inclusive practice. One of the key factors that can determine the effectiveness of any such developments is the effectiveness and the quality of communication between all parties involved. Communication and consensus between researchers, between teachers and other professionals and between parents and schools. Only then will the value of the insights, innovations and initiatives be put to effective use.

References

- Reid, G. (2003) Dyslexia: A Practitioners Handbook 3d Edition. Wiley.**
Reid, G. (2004) Dyslexia: A Complete Guide for Parents. Wiley