Understanding Dyslexia and Dyspraxia

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Understanding Dyslexia and Dyspraxia

Firstly, as there is so much overlap between these two syndromes, we will have a look at what they have in common before examining the characteristics which are more specific to each.

- Dyslexia and dyspraxia are examples of SpLD, 'Specific Learning Difficulties'.
- There is no one type of either dyslexia or dyspraxia - but clusters of characteristics: These frequently overlap. In fact, both dyslexia and dyspraxia can often co-exist in the same person.
- Typically, there is a marked discrepancy between intelligence and academic achievement.
- Neither dyslexia nor dyspraxia are related to race, social background or intellectual ability, *although* research suggests that people with dyslexia or dyspraxia are, statistically, likely to be more intelligent than non-dyslexic/dyspraxic sample groups.
- Dyslexia and dyspraxia are probably hereditary.
- Dyslexia and dyspraxia involves a difference in cognitive style affecting learning, organisation and memory.
- Dyslexic and dyspraxic learners need to employ different and often more personally meaningful strategies in order to learn language based skills.
- Many people with specific learning difficulties have in common a history of frustration and failure, especially in school.
- One of the key factors in relation to understanding the needs of dyslexic and dyspraxic students is that, first and foremost, they are individuals - while they may share common difficulties and strengths, there are individual differences. Every dyslexic/dyspraxic person is different and, should be treated as an individual.
- When learning new tasks dyslexics and dyspraxics are more dependent on the cognitive rather than unconscious part of their brains than people without specific learning difficulties. Consequently, learning takes longer and can be more tiring for us than for people without an SpLD.

What is Dyslexia?

- Lexis refers to language – dyslexia means problem with language. This can refer to reading, writing, spelling, and phonological problems which result in difficulties acquiring new language.
- Another typical feature of dyslexia is a marked discrepancy between intelligence and specific skills such as literacy, organisation, short term memory and certain information-processing abilities. Often verbal expression is favoured over written.
- Possibly 10% of people are dyslexic, of these 6% are mildly or moderately affected, 4% severely so.

What is Dyspraxia?

- *Praxis* comes from the Greek word meaning *to do*. Three abilities are required for effective praxis: these are the abilities to conceptualise, organize and execute sequences of unfamiliar actions. If one or more of these is impaired then dyspraxia may result.
- Dyspraxia is also known as *Developmental Co-ordination Disorder* (DCD)
- Dyspraxia manifests itself in problems in adequately registering, interpreting, organizing and integrating sensory information to produce an efficient response, and it affect many of the skills required in HE.
- As children dyspraxics are often referred to as having "clumsy child syndrome" because of their tendency to bump into things and they frequently have trouble with sports, e.g. catching balls.
- Between 5% and 10% of the population are affected.

The Origins of Dyslexia and Dyspraxia

The details and the origins of both dyslexia and dyspraxia are the subject of intense research but studies can generally be divided into the four areas of biological, cognitive, behavioural and environmental factors.

ENVIRONMENT

Socio economic factors affecting the help that young dyslexics and dyspraxics get

Cultural

Attitudes towards dyslexia and dyspraxia. The phonological nature of language and the how it is encoded in written form

Teaching provision

Dyslexics and dyspraxics need certain things to be taught explicitly and for material to be presented in visual (rather than exclusively verbal) and holistic (rather than exclusively sequential) ways.

BIOLOGICAL

Hereditary Factors: Dyslexia and dyspraxia are probably hereditary: several genes have been implicated. Often, there are many members within a family who are similarly affected

In The Brain: Subtle cortical differences, mainly within the left hemisphere (language centres), but also in the visual and auditory parts of the brain (resulting in reduced efficiency of transmission of this information)

Physiological brain function during activities such as reading, learning, etc. has been found to be different in people with dyslexia and dyspraxia when compared with people without SpLDs

COGNITIVE

Phonological deficit: problems with phonically

Memory storage and retrieval: Mainly due to problems with short term memory

Speed of processing information: tends to take longer to decode and encode information

Lack of automaticity: especially when learning new skills. This is because tasks are learnt using the conscious part of the brain more than for people without SpLDs – Using the conscious brain is more demanding than when using the cerebellum.

Visual discomfort: 70% of dyslexics and dyspraxics experience visual sensitivity (compared with 12.5% of the general populous).

BEHAVIOURAL

Accuracy of reading and spelling

Handwriting problems

Sustaining attention: because tasks require more attention (in addition to visual and phonic discomfort) sustaining attention requires more effort.

Poor organisation and time management: Tend to have poor working short term memory which is needed in order to plan, prioritise and organise.

Problems multi-tasking – integrating aspects of a task fluently

The Different Functions of the Two Brain Halves

The left and right hemispheres of the brain specialise in different tasks – people with dyslexic and dyspraxia are typically thought of as being more 'right brain dominant'. Consequently, they do certain tasks better than left brain dominant people.

what the **left brain** does best . . .

Linear progression: looks at the 'particular' and thinks sequentially, step-by-step, a to b to c

Working with facts

Explaining with words – uses language to name, describe, define

Remembering using language

Controlling emotions,

Taking life seriously

Structured activities

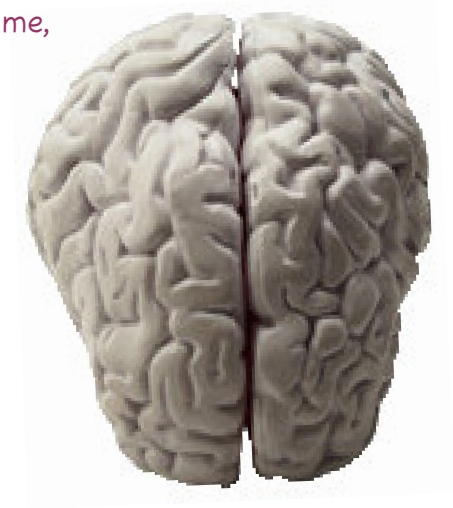
Organisation

Knows 'how'

Thinks in signs

Analysis - looks for cause and effect, breaks things down

Logical reasoning – deductive, draws conclusions through a logical progression from the 'general' to the 'particular'



what the right brain does best . . .

Global approach: thinks holistically, looks to 'whole picture'. Understands 'simultaneously' by making associations

Working with pictures

Explaining things visually – uses pictures, shapes and colour

Remembering using images

Expressing emotions,

Approaching life playfully

Fluid, open activities

Improvisation

Discovers 'what'

Thinks in designs

Synthesis – looks for inter-relationships and links

Intuitive understanding – inductive, draws conclusions from an intuitive basis and a variety of Sources

Overview

Dyslexia and Dyspraxia are not mental handicaps

They are just a different cognitive style that comes with numerous advantages and disadvantages. In fact, the only reason why dyslexia and dyspraxia have become viewed as disadvantageous is because of the emphasis society has placed on left brained skills. However, society has benefited greatly from right brained thinking which is a dyslexic and dyspraxic strength.

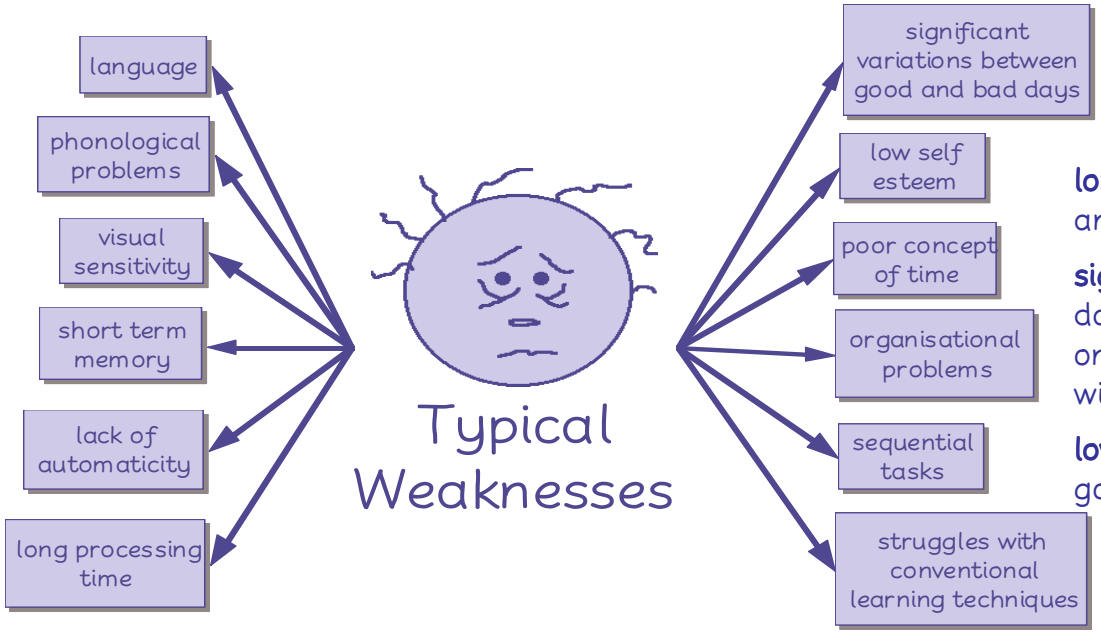
Dyslexia and Dyspraxia are not diseases

You can't catch it - you can't cure it. There are coping strategies to help you out with some of the disadvantages so that you're just left with the advantages

There is some evidence to say that there may be an evolutionary purpose to dyslexia and dyspraxia

The right brained mode of thinking is ideally suited for problem solving, intuitive and holistic thinking, and quantum leaps in understanding: These are the very qualities that have aided humans to evolve into such technologically advanced beings. And the fact that dyslexics and dyspraxics have some weaknesses means that their right brain strengths are amplified because they find they have to *overcompensate* in order to compete in the left brained world.

Furthermore, the fact that approximately 10% of society is either or both does suggest that it's not just an accident.



Language: e.g. spelling, reading, grammar, punctuation, structuring essays, learning new words, etc.

phonological problems: e.g. problems acquiring information/language from aural means

visual sensitivity: problems with text, especially large bodies of dense text which use an unfriendly fonts (e.g. Times New Roman)

short term memory: while our long term memory is good, our short term memory is poor, leading to problems getting information into long term memory. This also has implications for comprehension of text, performing tasks, constructing reasoned arguments, and can cause frustration.

lack of automaticity: meaning that tasks take longer to learn and are more readily forgotten if not used regularly.

long processing time: e.g. of information, of questions, of our answers, verbalising our ideas, etc

significant variations between good and bad days: on our good days we can be phenomenally insightful and astute – however – on our bad days we can feel like some one replaced our brains with some month old cabbage.

low self esteem: in addition to the days when we feel like we've got brassicas for brains, many of us spent our school days being told that we were lazy, stupid, or must try harder, humiliated over our spelling and reading aloud abilities. We are also frequently aware of our potential; consequently, our apparent failure to fulfil it leads to feelings of guilt, frustration and self hate.

poor concept of time: both in respect to planning tasks and turning up at the right place at the right time, especially when these are changed.

organisational problems: our time, our materials, our assignments, our work, ourselves, etc.

sequential tasks: in the absence of a big picture combined with short term memory problems, various aspects of sequential tasks cause great difficulties

struggles with conventional learning techniques: sequential, verbal reasoning or inchworm logic are frequently a foreign language to these students: we can't see the wood for the trees.

<table>
<tr><th>Organisation</th><th>Short Term Memory</th><th>Language</th><th>Experiences</th></tr>
<tr><td>Finds it difficult to organise him/her self with regard to work or time</td><td>Has a poor short-term memory</td><td>Shows significant discrepancy between oral and written performance</td><td>Has handwriting which is 'messy', poorly constructed or immature</td></tr>
<tr><td>Has problems ordering things sequentially</td><td>May be described as a 'quick forgetter' rather than a slow learner</td><td>Persistent problems with sentence structure, punctuation and/or organisation of written work, not due to a lack of experience</td><td>Difficulty in seeing errors e.g. proof-reading</td></tr>
<tr><td>Has a poor concept of time</td><td>Has trouble regaining train of thought once distracted</td><td>Spells erratically, has 'good days' and 'bad days'</td><td>Has trouble generalising or acquiring and applying rules</td></tr>
<tr><td colspan="2">Frequently late / missing appointments / appears poorly prepared</td><td>Has difficulty getting ideas onto paper</td><td>Experiences left/right confusion</td></tr>
<tr><td colspan="3">Consistently fails to express his/her real understanding, range of ideas or knowledge of vocabulary in written work.
This can lead to examination panic</td><td>Difficulty paying attention, easily distracted visually or auditorally</td></tr>
<tr><td>Does not seem to learn by 'ordinary' teaching methods</td><td colspan="2">Frequently misreads or miscopies and limited note-taking abilities</td><td>May experience low self-esteem & poor confidence</td></tr>
</table>

What the psychological report identifies

In order to verify that a person has dyspraxia or dyslexia, the psychological reports are trying to identify significant discrepancies between intellectual ability and ability to perform specific tasks. The tasks are related to short term memory, organisation, processing, sequencing, language and speed of performing tasks as well as IQ. Often, when people get their reports back, they are distressed by how low they have scored on certain aspects of the tests and often do not notice how high they have scored on other aspects. In fact, dyspraxics and dyslexics often score higher on their IQ tests than they do on the other skills. However, the IQ test may still result in an underestimation of intellectual ability, as two of its main foci are verbal (which dyslexics tend to score lower on due to lack of picking up language through reading) and mathematics (which can be additionally disappointing for those with dyscalculia), while ignoring other intelligences such as interpersonal, intrapersonal, visual, spatial or musical – which tend to be much stronger in people with dyspraxia or dyslexia. Unfortunately some of the skills dyslexics and dyspraxis are lacking are often required to compete effectively in academia. This is why dyspraxia and dyslexia *could* be perceived as disadvantages in such arenas. However, many of these disadvantages may be overcome with techniques and specialist equipment – which could leave you with just the advantages of dyslexia and/or dyspraxia.

Cue the advantages of dyspraxia and dyslexia…

DYSLEXIA & DYSPRAXIA typical strengths & abilities


Inquisitive


can make connections between many different concepts


ability to visualise 3D images from 2D plans and to rearrange mentally to create novel designs


Rich colour memory and ability to use fast multi-sensory combinations.


May have good practical skills


artistic


spontaneous


musical

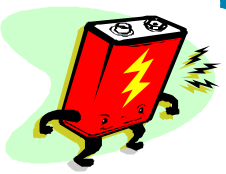

hard working


resilient


needs to achieve


Ability to absorb information from numerous sources simultaneously


creative


determined


persistent


enthusiastic


can think laterally and see inter-relationships between sometimes unconnected ideas


Information skills


generous


people oriented

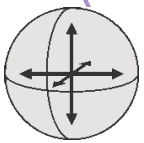

May have advanced verbal skills

May have advanced critical thinking skills, developing 'new' knowledge rather than merely retaining the 'old'.


good at problem solving


sees the "BIG PICTURE"


holistic way of viewing information/ tasks to be done


good visual-spatial skills


ability to recognise patterns in information


empathic


caring


open and aware

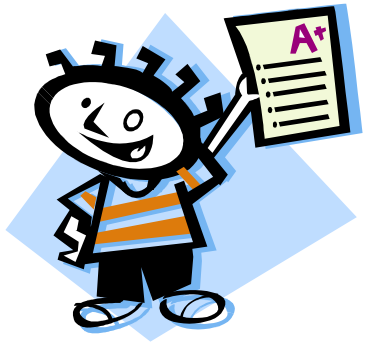

uses highly personal associations to aid memory

Opportunity to excel?

In the best circumstances, dyslexia and dyspraxia is an opportunity to excel. Although not all dyslexics and dyspraxics are geniuses, many have unusually good visuo-spatial awareness, and can demonstrate wide knowledge of a subject - physics, geography or architecture, for example - with large-scale diagrams and extended captions (mindmaps).

Example: Alexander Faludy, 14yrs old, IQ of 178, the youngest person to win a place at Cambridge since Pitt the Younger. He is skilled at delivering verbal dissertations of enormous range and complexity, but can write only two (illegible) words a minute. In addition, Einstein, twice fired from early jobs for poor spelling, once explained: 'If I can't picture it, I can't understand it.'

In our literate world a lack of automaticity in literacy is regarded as a problem and often impedes progress in work and education. However it can be argued that this 'weakness' may be seen as a manifestation of a strength in a different mode of thought.



Many of the people on the next page had difficulties in early schooling. Most of them found schoolwork, which entailed high verbal skills (especially reading, and writing), particularly difficult. Many were considered slow learners when young. However, many thought in pictures and utilised their highly visual mode to advantage.

Examples of People with Specific Learning Difficulties* who have succeeded.


Leslie Ash


Orlando Bloom


Anthony Hopkins


Marlon Brando


Bob Hoskins


Salma Hayek


Whoopi Goldberg


Harrison Ford


Tom Cruise


Cher


John Lennon


Liam & Noel Gallagher


Toyah Wilcox


Mozart


Robbie Williams


George Washington


Churchill


Michael Heseltine


JFK

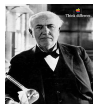

Politicians


Alexander Graham Bell


Steve Jobs


James Clerk Maxwell


Albert Einstein


Edison


Michael Faraday

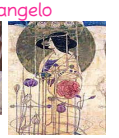

Charles Darwin


Inventors & Scientists


Leonardo Da Vinci


Michelangelo


Picasso


Rennie Mackintosh


Anthony Gormley


Auguste Rodin


Artists


David Bailey


Goldie Hawn


Actors


Pop stars and Musicians


Robin Williams


Comedians


Entertainers


Visually gifted


Architects and Designers


Jøen Utzon


Tommy Hilfiger


Eddie Izzard


Chef


Jamie Oliver


Film


Authors & Poets


Sports


Entrepreneurs


Steven Spielberg


Guy Richie


Walt Disney


Lynda La Plante

Agatha Christie

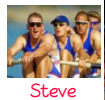

Ernest Hemingway


Benjamin Zephania


Hans Christian Anderson


Roald Dahl


Lewis Caroll


Steve Redgrave


Magic Johnson


Duncun Goodhew


Jackie Stewart


Paul Merson


Richard Branson


Anita Roddick

WOOLWORTHS
W F Woolworth


And finally...
Olaf, King of Norway
(and his children too)

*e.g. Dyslexia, Dyspraxia, ADD

The Dyslexic and Dyspraxic Learning Style

N. B. Please refer to the pages on *'The Different Functions of the Two Brain Halves'* and *'Dyslexia and Dyspraxia - Typical Strengths and Abilities'*

Dyslexia and dyspraxia can be seen as a differing cognitive style. Dyslexic and dyspraxic people have (as do others) strengths and weaknesses in how they process and organise information. Understanding these strengths and weaknesses can help you and your tutors find more effective approaches to organising learning and work.

Teaching methods tend to rely largely on language and the consequent need to process a great deal of verbal information in one form or another. Such an approach favours students who have no difficulties with processing language efficiently or using a sequential approach to learning.

Whereas, dyslexic and dyspraxic learners often have inadequately developed language specialisations in the left hemisphere, they often rely more on right hemisphere functioning. They therefore develop a preferred learning style which reflects this processing bias, favouring a holistic and visual-spatial approach rather than one which is sequential, temporal and language based.

Dyslexic and dyspraxic people typically might have a weakness in respect of their working memory - holding, storing, retrieving and manipulating linguistic information. As a result, they must make meaningful, often highly personal connections in order to learn and remember. The advantage of this is they often have excellent long-term memories. It can also make them good communicators and educators as they can often make information highly personal for other people too.

Not all dyslexic and dyspraxic people will exhibit this cognitive style and not all will have strong visual-spatial skills. However, 'right brain' approaches to learning are usually more effective for two reasons.

1. because the dyslexic and/or dyspraxic learner is definitely disadvantaged in some aspects of left hemispheric linguistic processing
2. because right hemispheric approaches are powerful tools to learning generally as they emphasize emotion, humour and imagery.

Common Features Of The Dyslexic and Dyspraxic Learning Style

Holistic learning style

- ★ Uses a global approach to problem solving
- ★ Personalises learning
- ★ Uses individual props to aid understanding
- ★ Needs overview as a guide to learning right from the start
- ★ Struggles with sequential learning and tasks, especially in the absence of a big picture.

Intuitive thinker

- ★ This is part of the process of holistic thinking. The student 'knows' the answer through making associations using personal knowledge or thought, rather than a systematic working out

Strong visual-spatial thinker

- ★ Dyslexic and dyspraxic students can use a form of thought in which images are generated or recalled in the mind and manipulated, overlaid, translated, and associated with other similar forms.
- ★ They can be rotated, increased or reduced in size, distorted or otherwise transformed from one familiar image to another.
- ★ Responds to visual-spatial patterns, e.g. keyboard, their surroundings and mind maps

Concrete learner

- ★ Sometimes needs to feel materials before writing or reading about the topic or trying something out
- ★ Good at 'hands on' practical skills
- ★ Learns better from actively investigating a subject rather than passively sitting and hearing the information

Divergent thinker

- ★ Makes connections between many different concepts and can see the inter-relationship between sometimes apparently unconnected ideas

Inductive thinker

- ★ Learns from lots of experience and practice rather than generalisations and rules

Spatial thinker

- ★ Can use three dimensional space creatively

There are also many techniques that can be adopted in order to overcome many of the problems of dyslexia and dyspraxia; In the process you're likely to have a lot more fun learning and just be left the advantages. These are what we try to share with you at the groups.