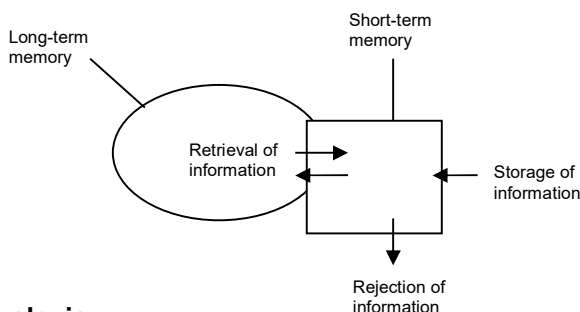


Understanding Dyslexia

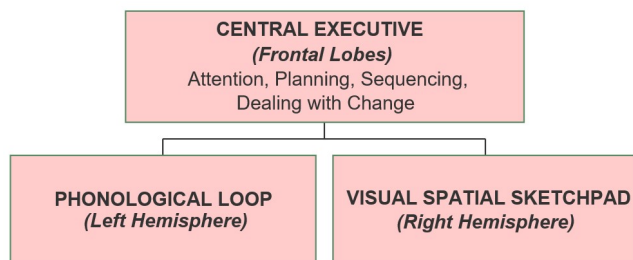
What is dyslexia?

Dyslexia is an information processing problem. The main area of 'inefficiency' is in working memory, the system responsible for holding on to information while storing it in long term memory and retrieving it from long term memory simultaneously. It is because the working memory system is inefficient that dyslexic adults are unable to perform a number of tasks automatically and 'multi-task', especially when words are involved, both written and spoken.



The causes of dyslexia

1. Dyslexia is usually genetic in origin so, even though it might not be evident until demands on particular skills reach a certain level, the processing inefficiency has always been there. It will have been masked by hard work, intelligence and the development of compensatory strategies. Working memory has three main components: *the phonological loop* located in left hemisphere language processing areas of the brain which deals with words and sequential material; *the visual spatial sketchpad* located in the right hemisphere that processes colour and images; and the *central executive* in the frontal lobes which controls attention, planning and adaptation to change. The evidence from neuroscience suggests that it is only the first that has a lower capability amongst dyslexic people. A simple example of this in action is that dyslexic people will say they remember faces but not names.
2. The efficiency of the brain is determined by connectivity. Studies suggest that patterns of interaction, particularly amongst sections containing components of working memory are different in dyslexic people. In particular, the *phonological loop* is not as capable as it should be, and this influences the *central executive*. The *visual spatial sketchpad* is usually more than capable, so dyslexics can deal with visual material. So, someone who is dyslexic can plan, attend and be organised in practical situations, but not when they are reading and writing.



Who is dyslexic?

The key to identifying those who might be dyslexic is ***inconsistency***. The competent practitioner who fails professional examinations, despite appearing to be well prepared. Someone who is very good at communicating verbally, but takes forever to complete paperwork.

These are the people who should fill in a screening checklist but, more often than not, it is the responses to individual items that are revealing rather than the overall score. *How do you tell left from right?* is a better question than *Do you have difficulty telling left from right?*.

What do Adult Dyslexics find difficult?

Dyslexic people show primary and secondary characteristics. The former are those that come directly from the processing inefficiency. These can include problems with:

- Literacy – especially reading comprehension and organising ideas on paper.
- Numeracy – particularly mental arithmetic.
- Organisation – including time estimation.
- Social communication – finding the right word at the right time.

Secondary characteristics are those that develop in response to finding things difficult including:

- Anxiety.
- Lack of self-confidence.
- Low self esteem.

Often when the primary issues are resolved there are spontaneous improvements at a secondary level.

Dealing with Dyslexia: Basic Principles

Improvement comes from strategy development. Strategies should suit the task, the individual and be kept simple. There are three basic principles which, if adopted, can enable people to become more efficient in the way they learn and work, by reducing the cognitive load. These are referred to here as the 3 M's:

(1) Making it Manageable

To accommodate the memory problem tasks must be made manageable. For example, a series of numbers can be easier to recall if they are reduced to smaller units, e.g. 593862 would become 59 38 62. This is why most of us remember telephone numbers in groups. The notion of making tasks manageable does, however, have broad implications. For example:

- Reading comprehension is made more manageable if one starts with an overview, so that the important points become evident.
- Writing is made more manageable if one begins with a plan.
- Organisation is made more manageable if one focuses on one task at a time.
- The use of IT can make many tasks, including reading and writing, more manageable by reducing the demands on word recognition and spelling.

(2) Making it Multi-Sensory

We learn through the senses. We remember something like 20% of what we read, 30% of what we hear, 40% of what we see, and 60% of what we do. When all the senses are combined, learning becomes much more powerful. Text to speech software and audio books, as well as web-based material are as legitimate as reading the printed word. It also means that lists, wall charts, calendars and diaries can be valuable ways of remembering. Talking through material with others can be very powerful.

(3) Making use of Memory Aids

These can include mnemonics for spelling technical words and homophones, as well as factual material. Visual imagery can be very powerful, as can the use of reasoning.

Self-advocacy

The most important skill a dyslexic person can develop is how to advocate for themselves in a constructive way. The focus should be on solutions not problems, as *we get what we need by telling others what we need rather than saying we have a problem*. Statements such as:

- I read thoroughly because I want to get all the information I need.
- I take longer over written work as I like to do a good job so I am very careful.
- Can you check this for me as I am not sure that I have picked up all the errors.

Just telling others that one is dyslexic leaves it to them to understand and probably misinterpret what that means.

Coaching Services

The best model for assisting high achieving dyslexic people comes from coaching. The focus being on enabling individuals to work with their strengths, utilising the knowledge they can gain from their own successful experiences of learning and working. It is paramount that coaches have an understanding of the nature of dyslexia.

Computer Software

Speech to Text (Voice Recognition) – Although many computers provide a speech to text function it is important that the software can adapt to the user. The best for dyslexic people is probably Dragon Naturally Speaking (Nuance.com). It can be trained to recognise vocabulary and accents. Prices range from £140 for the basic version to £350 for the professional package. There is a medical version of the latter.

Text to Speech (Read back) – Claroread (clarosoftware.com). Prices range from £59 to £150 depending on the functions required.

Neither of the above are complex to download and use, but sometimes training from the provider can make sure people are able to get the best out of the software.

Vision Testing

Coloured paper and overlays, as well as tinted lenses have become one of the panaceas for dyslexia. There is something known as **Visual Stress** (it has had many incarnations including Irlen Syndrome and Scotopic sensitivity. Some people are sensitive to colour, light source and intensity, whether dyslexic or not. Research remains equivocal.

If people want to experiment, beyond changing the background and font on their computer, low cost packs of overlays can be sourced at crossboweducation.com.

When it does seem to be a significant concern advice and testing can be sought from The Institute of Optometry. (ioo.org.uk)

Dyslexia Associations

The national advocacy organisation is The British Dyslexia Association. www.bda-dyslexia.org.uk. It has branches throughout the country, and provides:

- Information about books, computers and software.
- Advice on finding an appropriately trained tutor/coach.
- Local meetings and conferences for adults.

Further Reading

The Dyslexic Adult: Interventions and Outcomes – by McLoughlin and Leather, 2013. (ISBN 978-1-119-97393-5). Wiley Publications Ltd.