

## Chapter 2

# Dyslexia



- ★ What is dyslexia?
- ★ How can I spot a student with dyslexia?
- ★ Common indicators
- ★ Common strengths
- ★ How can I help in the classroom?
- ★ Individual help
- ★ Key points

## What is dyslexia?

People with dyslexia have *difficulty with the written language* and so they have problems with reading, writing and spelling.

Dyslexia has been defined as a 'difficulty in interpretation of the written language in a person who has no visual impairment, hearing impairment or intellectual impairment' (Worthington 2003).

Dyslexia occurs across the full range of intellectual abilities. It is thought to affect up to 10 per cent of the population, with a severity varying along a continuum from mild to severe (British Dyslexia Association). It can affect both boys and girls.

The term 'developmental dyslexia' is sometimes used; this means that the person is born with the condition, and that it has not occurred as a result of an illness or accident. It cannot be cured but coping strategies can be learned.

## Where does the name come from?

*Dys* comes from the Greek word meaning *difficulty*.

*Lexis* also comes from the Greek word meaning *word*.

So dyslexia means *difficulty with words*.

Dyslexia often runs in families, which suggests that there might be a genetic link. It sometimes occurs with allergic conditions such as asthma, eczema or hayfever.

Brain imaging techniques show that people with dyslexia process information differently from others. They tend to think more in pictures than in words and make rapid lateral connections (Schnep 2014). This can be very advantageous in some circumstances and walks of life.

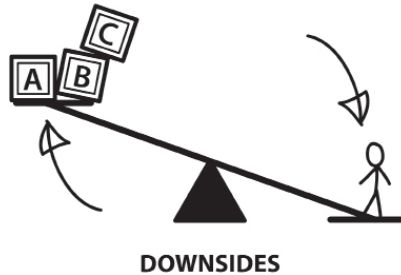
Hearing problems in early childhood, such as glue ear, or visual weakness such as eye tracking difficulties, do not themselves cause dyslexia but they can be contributory factors (see Chapter 1).

## How can I spot a student with dyslexia?

Dyslexia is often discovered because of a discrepancy between a student's good oral ability and their mediocre to poor performance on paper.

Look out for a student who makes sensible and intelligent contributions in class but consistently comes out with test and exam results which are lower than expected, despite hard work. They might also appear to make 'silly' mistakes due to misreading questions or instructions.

## Common indicators



Students with dyslexia will show some of the indicators listed below, but not all of them, so it can be confusing. Remember that this can be further complicated as some students may have other Specific Learning Difficulties (SpLDs) as well.

### Reading

- Slow reading speed.
- Reading is often inaccurate.
- Will not always understand what they have read as they are concentrating on deciphering the words, so may miss the overall meaning.
- Reading inaccuracies increase under pressure. Liable to make more mistakes in tests.
- Will substitute a similar looking word often starting with the same letter. For example, 'silky pyjamas' could become 'silly pyjamas'.
- Difficulty with written comprehension, often due to misreading words, or missing out key words in the text.
- Daunted by large chunks of texts and small print.
- Letter reversal in reading words or numbers such as reading 'sing' for 'sign' or '28' for '82'.
- Dislikes reading out loud as hesitant and inaccurate. Worried about being laughed at.

## Spelling

- Inconsistent spelling of the same word, often within a single piece of writing.
- Difficulty with phonology (hearing the sounds in words). May miss out syllables of words, for example 'diffulty' for 'difficulty'.
- May confuse consonants, for example g and k or b and p.

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My daughter called potatoes 'botatoes' for years!

*Author*

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- Letter reversal in spelling similar to reading, for example writing brian for brain. This can also occur with writing numbers, which causes difficulty with mathematics.
- Can do well in spelling tests of pre-determined words but spelling 'goes to pieces' when writing an account, as concentration is on the content rather than the spelling.
- Can learn a spelling one day and forget it the next.
- Names of people and places are often misspelt and variable.

## Note-taking

- Cannot copy accurately from a board. May copy spellings incorrectly, miss out words or jump lines.
- Cannot keep up with dictation.
- Inaccuracies in notes taken in class, especially in a foreign language or with chemical symbols such as  $C_6H_{12}O_6$ .

- Unable to process and understand information at the same time as writing down notes.

### Written work

- Slow writing speed.
- Poor quality in terms of spelling and punctuation.
- Unable to think about the content and spelling at the same time, so if the content is good, the spelling can be poor. Conversely, if the student's concentration flow is disrupted by thinking about spelling, then the content is likely to be stilted.
- Written piece may be much shorter and simpler than expected as the student will avoid certain words if they are unsure of the spelling and stick to 'safe' short words.
- Capital letters may be used randomly throughout a piece of writing.
- Writing may be difficult to read as letters such as a, d, g and q may not be fully formed.
- Difficulty organising thoughts clearly and logically, so essays may ramble.
- May fail to answer the question, either due to misreading the question itself, failing to understand it or due to lateral thinking causing a drift away from the topic.

### Mathematics

Some students with dyslexia may be good at mathematics but make errors when interpreting questions.

- Misunderstanding questions – maths vocabulary is quite extensive and can be confusing.
- Confusing symbols such as + with  $\times$  and  $\div$  with  $-$ .

- Not reading instructions properly.
- Algebra can be especially difficult if letters such as b, d, p, q, are used.
- Short-term memory problems cause difficulty retaining numbers long enough for the next step of a calculation.
- Difficulty remembering a process involving a series of steps.

Some students might also have dyscalculia (see Chapter 3) but this is not always the case.

### Concentration

- Can get distracted easily.
- Often has a short concentration span.
- Makes rapid lateral mental leaps and connections, so can go widely off topic – ‘grasshopper mind’.
- Thoughts are often disconnected and not organised or sequential.

### Slow processing speed

- Takes longer to answer questions either verbally or in writing. Sometimes this is due to having to change the information mentally into pictures before it can be decoded and worked on.
- Liable to panic under pressure and mind ‘goes blank’, even with something they know well.

### Poor short-term memory

- Problems remembering instructions.
- Difficulty retaining numbers for calculations.
- Difficulty remembering what to write down.

### Learning information

- Unable to revise quickly and ‘cram’ for tests due to a poor short-term memory.
- Takes much longer to learn as things have to be committed to long-term memory.
- Struggles to find effective revision techniques.

### Tests and exams

- Can underachieve, causing a discrepancy between verbal performance and written test performance.
- Difficulty organising thoughts clearly and logically for long answers and essays.
- Runs out of time.
- Panics.
- Doesn’t read the question properly, so makes apparently ‘careless’ mistakes.

### Organisation

- Forgets instructions or directions.
- Poor sense of direction so gets lost easily.
- Confusion of left and right.
- Can misread timetables and instructions and has difficulty telling the time.
- Gets distracted and forgets the time.
- Forgets to bring equipment, books, notes, homework.
- Loses belongings.
- Confuses names of places and people, especially if they begin with the same letter.

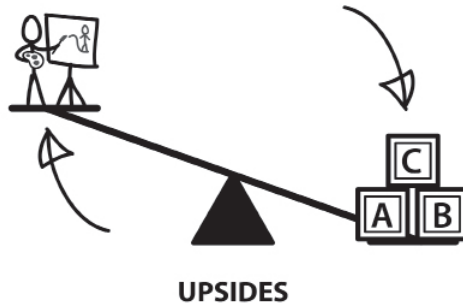
### Sensitive, emotional responses

- May feel upset and humiliated in class.
- Will take comments to heart. Upset by criticism.
- Easily discouraged, leading to low self-esteem.
- Sensitive and can lack self-confidence.
- Can be daunted by situations or complex tasks.
- Can decide to play the class jester to gain credit among peers and to give an 'excuse' for not doing so well.

### Fatigue

- Generally has to put more effort into keeping up with work and this leads to increased tiredness, stress and anxiety.

### Common strengths



- Innovative and imaginative thinker
- Good visualisation and spatial skills
- Often creative: good sense of colour and texture, may excel at art, design and photography



- Thinks in pictures, which is quicker and more multidirectional than thinking in words
- Good verbally
- Can be very humorous
- May be good at the performing arts
- Holistic, sees the whole picture
- Can multi-task
- Intuitive problem solver
- Often hard working and tenacious
- High emotional intelligence, empathetic
- Good interpersonal skills
- Valuable and supportive team member
- Entrepreneurial

## How can I help in the classroom?

*Your attitude is important.* Be supportive and upbeat and let any students with dyslexia know that you understand their difficulties. Tell them that you realise they are intelligent and you are expecting them to reach the same goals as the others but their learning strategies may have to be a little different.

Remember that it will take students with dyslexia longer to interpret written questions and to write the answers. Do not expect them to write as much in a set time; they will probably qualify for extra time in tests and exams.

Work with the student to devise successful learning methods. Keep cheerful and be willing to try new approaches. A friendly manner and a sense of humour will make a huge difference.

### Seating

Make sure that they sit near the front. This has several advantages:

- They can see the board clearly which will aid reading.
- They are more likely to keep engaged with the lesson and not get distracted.
- You can see their work easily and know whether they are keeping up.
- You can check that information and homework instructions are written down correctly.

### Reading

- Always remember that students with dyslexia will take longer to read a text.
- They may also not be able to process the content at the same time as reading.
- Reading accuracy may be poor so encourage them to read instructions slowly, twice.
- Try printing on different coloured backgrounds. It is worth experimenting. They will tell you what works best for them.
- Use a large, clear font.
- Question papers should be well spaced out. Avoid giving students with dyslexia questions which are reduced in size to save paper.

### Reading out loud

This can be a major source of panic, stress and embarrassment for some students. They will dread the moment when they are asked to read out loud.

- Do not suddenly ask them to read out loud.
- Some students will be happy to read if they have had a chance to see the passage in advance. If this is the case, identify a piece which they can look through before they read.
- A larger print copy of a text is sometimes easier to read.
- Many students with dyslexia are good actors, presenters and orators but have trouble sight reading. Give them the text in advance. (Some very talented actors with dyslexia have to learn the audition scripts.)

### Spelling

- Create a list of key spellings for each topic.
- Students could make a vocabulary book or glossary.
- Use colour to liven up vocabulary lists, especially in foreign languages. Perhaps nouns could be on one colour paper, verbs on another.
- Mnemonics can be brilliant for difficult spellings. If they are funny they are more memorable. Look up some for your subject or get the students to make some up.
- Use any tricks or jokes you can think of to help fix the spelling of difficult words in your own subject.

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It is synthesis not sinthesis as scientists always ask why (Y)!

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- A spell checker is useful for written assignments, but make sure the student is aware that it will not recognise spelling errors if they make a recognisable word in another context. Phrases such as ‘The Duck of Wellington’ or ‘The Canterbury Tails’ will pass unchanged.

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The world is full of amazing orgasms.

*Year 7 biology student*

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### Giving notes in class

- Ideally give out printed notes. Notes with gaps to fill in are often a good compromise. These can be highlighted and personalised with diagrams or annotations but the writing process is much less arduous. You also know that the students have the correct material to learn from.
- If you are handwriting on a board make sure your own writing is clear, large and easy to read.
- Use different colours for each row or block of writing, so that students are less likely to jump rows.
- Let them sit next to a willing, reliable, clear writing ‘buddy’ from whom they can copy.
- Dictation: try to avoid this if possible but if you have to dictate, always write up any key words or awkward spellings on the board, and don’t go too fast.
- Remember that students with dyslexia are unlikely to be able to process or understand the information at the same time as they are copying from the board or from dictation.

- Check their work regularly, as there are likely to be many errors.
- Students with severe dyslexia may be able to record the lesson electronically and listen to it again later. Printed notes should be given as well, though, to avoid hours of copying up after the lessons.

Table 2.1 PowerPoint dos and don'ts

<b>DO</b>	<b>DO NOT</b>
Use a large font size	Use a small font size to fit lots of information onto one slide
Use a clear, simple font	Use fancy writing
Use double spacing	Crowd information
Keep slides simple: one point per slide is enough	Put too much information on each slide
Include colour diagrams or cartoons	Just have writing
Vary the background colour and colour of the writing, such as yellow writing on blue	Use just black writing on a white background
Read the writing out loud to the students and explain the slides further	Talk about other things when the students are trying to read and understand
Keep the slides lively and fun	Make the slides boring
Let the students read the slides through once before making any notes	Expect students to make notes on the first reading

### Type of font

- Use a large font size.
- Keep the font simple and clear. Avoid ‘character’ fonts and ones with serifs.
- Use double spacing.

### ----- Preferred font types -----

Arial

Calibri

Trebuchet

Comic Sans

Century Gothic

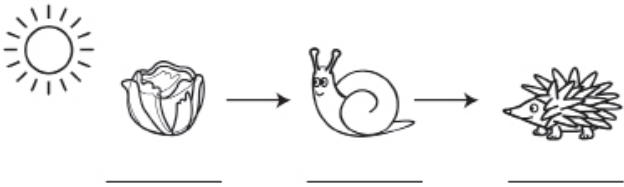
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### Making worksheets (see Figure 2.1)

- Keep sentences short and clear.
- Space information out well: use double spacing.
- Use a large (12 or 14 point) clear font.
- Break up the page with bold headings, subheadings and indentations.
- Use bullet points.
- Add diagrams, cartoons and other visual markers.
- Use colour – although this may be expensive it is excellent if you can use it.
- Print on coloured paper.
- Make the worksheets clear and attractive.

## Food chain work sheet

**1** Fill in the words “producer”, “primary consumer”, “secondary consumer” onto the diagram of a garden food chain.



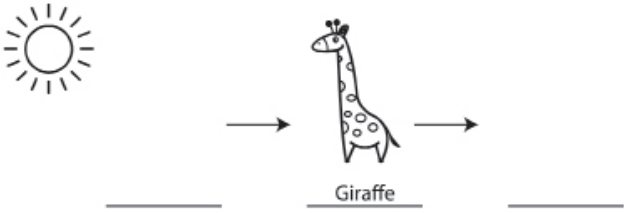
\_\_\_\_\_ → \_\_\_\_\_ → \_\_\_\_\_

**2** What do the arrows on the food chain mean?

**3** Where does the lettuce get its energy from?

**4** If the hedgehogs died what would happen to the lettuces?

**5** You win a safari holiday. Draw a possible safari food chain.



\_\_\_\_\_ → Giraffe → \_\_\_\_\_

Figure 2.1 Example of a worksheet

### Mathematics (see Chapter 3)

- Read examples out loud as well as writing them on the board.
- Give a vocabulary list with meanings.

- Try to use letters that look very different from each other.
- Go through an example for the class showing the layout and all the steps of the working out.
- If you are expecting the students to copy down the example, have one printed on a sheet to give to students with dyslexia. (It is less embarrassing if you can give a copy to all students, but this may depend on the school's policy.)
- Teach with visual aids and in a multisensory way.

### Studying set texts

People with dyslexia are holistic and like an idea of the 'big picture' before studying the detail.

- Give an overview of the story at the outset.
- Let students know in advance the text or chapters to read so that they can do so before the lesson.
- Is there a larger print version of the book available?
- Is the book available in an unedited audio version?
- Film versions can be useful to give an overview of the plot and bring the characters to life, but remind students that they may differ from the original text.

### ----- A word of caution -----

Much as we all enjoyed Colin Firth's portrayal of Mr Darcy in the BBC film of 1995, there is actually no wet shirt scene in Jane Austen's *Pride and Prejudice*!

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- Illustrations or diagrams showing the relationships between the characters can be a useful visual aid.



- Try to make the book, poem or passage come alive and go into long-term memory, with theatre visits, acting out sections of the stories in the students' own words, dressing up or having debates from different characters' perspectives.
- How about converting a poem to a rap or song?

### Essay writing, course work and projects (see Chapter 9)

These can be very daunting as students with dyslexia feel overwhelmed by perceived 'big' tasks. They tend to see the enormity of the whole project rather than being able to break it down into small, achievable goals.

You can help a great deal by dividing the task into smaller manageable 'chunks' and giving dates when different sections are due. Outline what you are expecting in terms of sections to be completed, approximate word count, and time frame. Ask for each section to be handed in so you can check that the students are on target.

### Setting homework

- Set homework early in the lesson.
- Keep instructions clear.
- Give guidance about the length of time you expect students to take.
- Remember that it may take a student with dyslexia a lot longer to complete a piece of work, so indicate what is essential and what could be tackled 'if time'.
- Say clearly when homework should be handed in and where to put it.
- Ideally have the homework task written out on a handout, including page numbers and questions.

If the students write it down themselves, check for accuracy.

- Can the homework details be recorded electronically? Some schools will let students write or dictate their homework onto a mobile phone.
- Is there a school intranet where homework details could be placed?
- Homework books are sometimes useful as parents can see them, if the student remembers to take them home.
- It is useful to have the number of another member of the group who could be phoned if needed to clarify the homework in the evening.

#### Enjoyable homework for students with dyslexia

Sometimes set imaginative homework tasks which allow students with dyslexia to use their talents. Teachers could ask students to:

- Draw a series of pictures or cartoons to illustrate the work.
- Annotate a picture that you provide.
- Make up a song/poem/rap/advertisement.
- Plan a debate about an issue.
- Make up a game, word search, crossword puzzle (I suggest you check first that the spellings are correct for these!)
- Prepare a short dramatic presentation.
- Record a short voice play or monologue.
- Make a short film.
- Make a model.

## Marking homework

- Mark for content, not spelling. Remember that there is often a disparity between academic ability and written English. 'Notes on Ingelburu Caves' below shows an example of this.
- Avoid crossing out every spelling mistake. The correct version could be written in the margin or underneath.
- Do not correct all the language and punctuation errors. Decide what is important in each piece of work.
- Write at the bottom any key words which were misspelt so that they can be written into a glossary and learned.
- Try to write a positive constructive comment such as 'Well done, I especially liked your vivid description'.
- Keep other comments constructive and upbeat, 'Next time think about...'
- Depending on your school's marking policy, it is sometimes a relief to mark without giving a grade but just a written comment.
- Consider giving two marks, especially for creative projects: one, for academic content and the other, for overall 'artistic' presentation/originality. This is a useful way of acknowledging creativity and original thinking.
- Avoid red pen.

## - - - - Notes on Ingelburu Caves - - - -

Ingelburu belongs to Reginald Fara. He = Botanist.  
 Lots of rododendrons. There are tunnels in Nature trail.  
 Crippel hole/squeeze holes = grey rocks - gritstone (look like sheep)

Caves. Opened by James Farrer in 1837. We were Given Helmets. Caves = limestone only cos it is the only rock that can be dissolved in water. Fell Beck made the cave, then fawnd a lower passsige. Made a wall of Tufa held back lake. They blowed it up. There was a micro invironment in the cave, where the lite had got to it. This ment that moss grew there. Tufa grew on moss. Calsite crystals were glinting

Elefants legs = piller

Copper = Tercoise

Algee = Tercoise

Ion = brown

Peet = brown

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Disparity between content and spelling. Thanks to Neil Cottrell of LexAble Ltd for permission to use this illustration (his geography fieldwork notes, Year 6)

### Organisation (see Chapter 9)

People with dyslexia often have very genuine problems with organisation. They are likely to misread instructions, get lost, forget equipment and arrive late and exhausted to lessons. Planning ahead and meeting deadlines can also cause difficulty and the student will need guidance.

### Learning for tests and exams (see Chapter 10)

Students with dyslexia may have a poor short-term memory. They will need something to underpin the facts in order to get them into the long-term memory, so learning is going to take longer and will be harder than for most students.

## Individual help

An *adult mentor* is a great help for students with dyslexia. Regular meetings with their mentor are useful to support the student, iron out difficulties as they arise, boost their confidence and celebrate successes.

A *specialist learning support teacher* can also provide invaluable academic support to a student with dyslexia.

Here are some personal or individual strategies for the students to try:

### Reading

- Students could use highlighters to emphasise key words when reading questions or instructions. This is very important in exams when nerves add to the likelihood of making dyslexic errors.
- When reading it helps to use a ruler to keep the place. It is possible to get reading rulers, which have a small window slit to read through. This helps to prevent jumping lines.
- Using coloured plastic overlays helps some students.
- The background, colour and font size on a computer screen can be adjusted as necessary.
- Students should read books with fast-moving stories, larger clear print, illustrations and not too much description. The publishers Barrington Stoke specialise in producing exciting stories for readers with dyslexia.
- Listening to audio books of set texts will give students the overview. Students should also try to obtain a copy of the book, preferably with a larger print, to read as well.

- Text-to-speech software will read out the text and can make a huge difference. It is then possible for students to carry out the exercises that are required, having understood the passage or instructions.

## Spelling

- Spelling rules should be learned.
- Phonetic sounds of letters and groups of letters should be revised.
- Students could make a glossary of key terms for each subject.
- Test key words regularly – reinforcement is important.
- Colour cards and drawings could be used to aid learning vocabulary.
- Make up mnemonics.

## Revision techniques (see Chapter 10)

- Coloured card or sheets could be used so that the facts are related to a colour.
- Drawings, cartoons and funny stories could be used.
- The students could make up poems/songs/raps.
- Visual/kinaesthetic reinforcement should be used.
- Pictures, especially for learning vocabulary, could be used.
- Students could make voice recordings.
- Students could work with a friend and ask each other questions. They could teach some facts to each other.
- Mnemonics could be used both for tricky spellings and lists.

## Order of planets in

### distance from the Sun

My Very Easy Method: Just Set Up Nine Planets

(Mercury, Venus, Earth, Mars, Jupiter,  
Saturn, Uranus, Neptune, Pluto)

### Avoid getting lost

Usually in secondary schools the teachers have set rooms and the students move from lesson to lesson. This can be very confusing for someone with dyslexia if they have a poor sense of direction. A plan of the school layout with lesson rooms marked will help, but the teacher also needs to check that they understand how to read the school timetable. Colour coding can often help, as can memorising left and right.

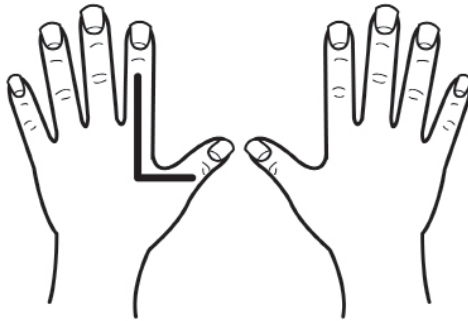


Figure 2.2 The left hand makes the letter L

### Time keeping

Reading an analogue clock can be really difficult for some people with dyslexia, so they may genuinely not know the time. A digital watch is a good idea. Alarms can be set on digital watches to remind them when to set off for lessons

(mobile phones also have alarms but some schools will not allow them).

Outside school, plans of routes or maps are useful in either paper or electronic form. The student will need to factor in time for getting lost until they are familiar with a route, and learn to arrive early or make a practice visit first to be sure of getting to the correct place on time, especially for important appointments. This is something I still do today!

### Using specialist software for assistive technology

There is now a great range of assistive technology available for use by students with dyslexia and this can make a huge difference to their lives and academic achievement.

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Using text to speech software has been the single most important coping strategy in my life.

*Neil Cottrell was an intelligent student with severe dyslexia. He gained a first class honours degree in psychology and is now the director of an assistive software company LexAble Ltd*

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Students should take time to decide what their needs are and which devices or programmes will help them the most. The field is changing and developing very rapidly so it is worth seeking up-to-date advice. The British Dyslexia Association has a technology unit which gives advice and support (see page 222).

Some useful software includes:

- *Spell-checking programmes*: some work phonetically, while others have a playback facility. These can be excellent as they allow the student to concentrate on content rather than spelling.
- *Voice recognition software*: this can be brilliant for students with severe dyslexia as the software responds



to the spoken word and will convert it into written text.

- *Text-to-speech software*: this reads text out loud and can be used with electronic text websites, emails, articles and scanned pages from books.
- *Scanners*: these convert pages into electronic format so that text-to-speech software can then be used. There are now scanners for books so that the text at the centre of the spine is not distorted.

### --- Key points -----

- ★ Dyslexia is a problem with reading, writing and spelling.
- ★ It affects about 10 per cent of the population.
- ★ It is not linked to general overall intelligence.
- ★ Organisational skills can also be poor.
- ★ Students with dyslexia can learn coping strategies to work around their difficulties.
- ★ Multisensory teaching techniques are important.
- ★ Sensitive classroom teachers can make a huge difference.