

Identifying and Addressing Barriers to Achievement in the Mainstream classroom

“If a man does not keep pace with his companions, perhaps it is because he hears a different drummer. Let him step to the music he hears, no matter how measured or far away.”

Henry Thoreau.



The lead quote is from the American philosopher Henry Thoreau. He first introduced the idea of “marching to a different drummer” This article is about those children who hear a different beat and so need a different rhythm to their learning.

“A Specific Learning
Difference Which Is
Constitutional In Origin and
which, for a given level of
ability, may cause
unexpected difficulties in
the acquisition of certain
literacy and numeracy skills”

For the purpose of this article dyslexia will be presented as a specific learning difference rather than as a difficulty. We all experience difficulty in learning some skills and this is part of our individuality. It is teachers and parents who can decide if Dyslexia is to be a difference or difficulty by behaviour at home and in the classroom.

It has been suggested recently that that Dyslexia does not exist, a view which has managed to gain considerable publicity in recent months. The argument is flawed because it is based on a very narrow definition of Dyslexia, basically linking it to the acquisition of reading skills. As soon as the debate is widened to include the acquisition of skills necessary to develop spelling and getting ideas down on paper the specific issues that affect dyslexic learners are easy to identify.

Dyslexia is constitutional – that is to say, it is part of the child. The brain is organised differently which means that some skills are learnt very easily, while others take a long time to develop. One issue for dyslexic learners can be the slow acquisition of some basic literacy skills – unfortunately this can be interpreted as being due to a lack of intelligence.

"A Specific Learning Difference Which Is Constitutional In Origin"

- Family history
- Early to walk - may not crawl?
- Problems with difficulties
- Problems with labels, rhymes, sequences
- Spells/reads on one line but not on next
- Quick thinker/doer - but not when given instructions
- Enhanced creativity
- Aptitude for constructional/technical toys
- Appears bright but is an "enigma"!

Dyslexia as a Specific Difference in the home and classroom

This section will look at the way Dyslexia may manifest in the classroom and will the important questions - “What do I look out for? Then what I do if and when I think Dyslexia might be an issue?”

Family History

It is generally accepted that Dyslexia often runs in families; having parents who are dyslexic significantly increases the incidence. It is also common for someone in the wider family to be dyslexic, rather than parents, and the condition can also occur without any familial incidence.

If an older child is dyslexic, look carefully for a similar pattern of need in little brother or sister – if one twin is dyslexic there is a better than 90% chance that the other will be as well.

Early to walk – may not crawl

Research using MRI technology is showing that the brain of a dyslexic child or adult is differently “wired.”: there is a different pattern of activity in the brain that accounts for the learning difference. Some dyslexic children seem to miss the crawling stage, going straight from “bottom shuffling to walking. It has been reported that non-reading adults have learnt to read following a course of crawling activities; so asking about crawling may help to build a picture. Activities that improve coordination, like Brain Gym, seem to integrate the cerebellum and promote the acquisition of basic skills in some children.

Dressing skills

Unexpected problems with the acquisition of dressing skills are also commonly reported. This is why experienced parents, grandparents and nursery nurses are often the first people to recognise and respond to early signs of Dyslexia. Consider a child whose brothers and/or sisters have age/ability appropriate dressing skills, implying that they had been taught as part of the normal parenting process. This child, however, cannot manage some aspects of dressing or perhaps does not seem to appreciate the order that clothes need to be put on. This is unexpected, because s/he has clearly been taught the skills in the same way as the siblings, so this is another indicator of a learning difference. The significance of this indicator is compounded if the child is found to have other coordinational strengths, perhaps with Lego, Sticklebricks etc. Grandparents, Uncles and Aunts may also have a view of typical skill acquisition based on their own experiences of parenting which can help to build up a picture of unexpected difficulties.

Labels, rhymes and sequences

These are the foundation of many tests for Dyslexia, but issues are easily identified at home, without necessarily resorting to testing. These will be discussed in more detail in another article. When a child fails to develop when others with apparently similar needs begin to do so, and especially when there are clear strengths in other areas, then we are probably looking at the “unexpected” once again.

Spells/reads a word on one line, but not on the next

This is a tendency that frustrates teachers and parents and pupils, especially when it is followed by accusations of laziness and/or lack of concentration. In fact this issue could be considered to be a key indicator of unexpected difficulties. The problem seems to occur as a result of two key areas of vulnerability for dyslexic students, their auditory and visual sequential memories. Both memories have limited working space and are easily overloaded, particularly when a student is stressed and especially during those well-documented “dyslexic days” when little seems to go right. In consequence, a word that has been successfully read/spelt further up the page is completely “new” and unfamiliar the next time it is encountered.

Quick thinker/doer, but not necessarily when given instructions

Dyslexic students are often very quick to make connections and to solve problems, but not always when given instructions. The differently wired brain sometimes slows down the processes associated with receptive language and can inhibit rapid/automatic responses to instructions and/or questions – mental maths and other “quick fire” challenges can often leave the student exposed and frustrated. When given time to take up time dyslexic students can function as well, if not better, than others of similar ability. A failure to achieve “automaticity” in certain key tasks may be regarded as a positive indicator of dyslexia and may manifest in things like multiplication tables, number bonds, alphabetical sequencing, referencing and spelling.

When given time to reflect, dyslexic students often produce answers that are as good, if not better, than their faster reacting peers. There can be a tendency to perceive a quick response as a sign of intelligence, whereas in reality a first response may be ill considered or even wrong, while the reflective quality of dyslexic students’ responses may often be of far higher quality. Assessment for learning strategies is particularly useful for dyslexic learners

Enhanced creativity

Not all dyslexic students are creative. But those who are will often be very original thinkers who consistently come up with unique solutions to problems. The differently wired brain seems to convey the gift of creativity in certain areas, something that is beginning to be recognised by employers. Careers like floristry, landscape gardening, window dressing, architecture, engineering, plastic surgery, art, design and computer graphics are all areas where dyslexic students seem to excel because they require an ability to see the whole picture even when bits are currently missing.

Aptitude for constructional/technical toys

Who brings in amazing working models, built without recourse to manual or instructions? Who has an intuitive ability to make new software work or to make old programmes work to their optimum? So often it is the dyslexic student who just seems to “know” how things work. This is a rare talent and one which needs celebrating and also to be placed in a proper context against current weaknesses in the acquisition of some basic skills.


Appears bright but is an enigma

A picture has been painted of a student who, like all others in a classroom, is a complex blend of strengths and weaknesses. Dyslexic students can be enigmas because their skills and talents do not always transfer to some school based task. This lack of transfer is particularly evident when a student gives a competent performance during oral, problem solving tasks and then fails to present written work at the same level.

As Howard Gardiner observes, “There is something wrong when a person is able to do some things very well but is not considered smart if these things are not connected with school success”

Part of the challenge for teachers is to discover ways of empowering dyslexic students to feel good about themselves and their abilities.

Example of difficulties



16. Speedy
17. They
18. come
19. was
20. more
21. were
22. many
23. water
24. give
25. house

7. 3645P
8. 72823
9. 16592
10. 82754
11. 51251A
12. 6P157

Dyslexic learners are often uncomfortable when trying to read black font on a white background. In fact up to 20% of a given population may experience similar difficulties as a result of what is known as scotopic sensitivity or Irlen's syndrome. There is some controversy among researchers over the validity of these conditions – however the anecdotal evidence is compelling.

Visual stress: "blurry" / "halos"

As any parent, grandparent, or baby-sitter knows, some babies are adaptable, placid, and regular in their habits, while others are difficult and unpredictable. Differences in temperament show up from the first day of life: some infants sleep very little, others sleep a lot; some infants are highly sensitive and cranky, others are quiet and unresponsive.

Since newborns have not been exposed to the world for long, environmental factors beyond the womb can hardly account for such differences in temperament. Rather, the differences must be largely a result of genetic influences. Yet there have been few, if any, attempts to relate different biological endowments at birth to newborns' behavior.

*We all see things the same way,
We see words in groups or phrases,
The print is more dominant than the
background, The print shows no
movement. The printed letters are
EVENLY BLACK, Black print on
white paper gives the best contrast
for EVERYONE. White background
looks white.*

Learners report that words can swim and swirl on the page, making it very difficult for them to read. However using a pastel background can make a significant difference. As a result many schools no longer use white paper – all materials, handouts, letters home etc, etc are printed on a pastel shade of paper. Anecdotal evidence suggests this to be a very cost effective strategy which has the potential to improve the reading of 1:5 learners.

The "cross-wired brain"

- "Left" for language
- Control of right hand usually dominant for wiring
- Brain is cross wired to give us better control of right side
- Also same side connections and left/right, right left connections

The typical brain deals with most language issues in the left side and most visual issues on the right. There are usually well established connections (hard wiring) to allow both sides to work together. Cross wiring is particularly important to give us better control of our “dominant side” – typically right side supported by left brain.

The brain learns by developing or growing connections. When a new skill becomes automatic, the connections have become hard wired to permit instant responses. So learning to drive gradually become automatic, allowing the driver “brain power” to focus on traffic etc as well as the physical aspects of changing gear etc.

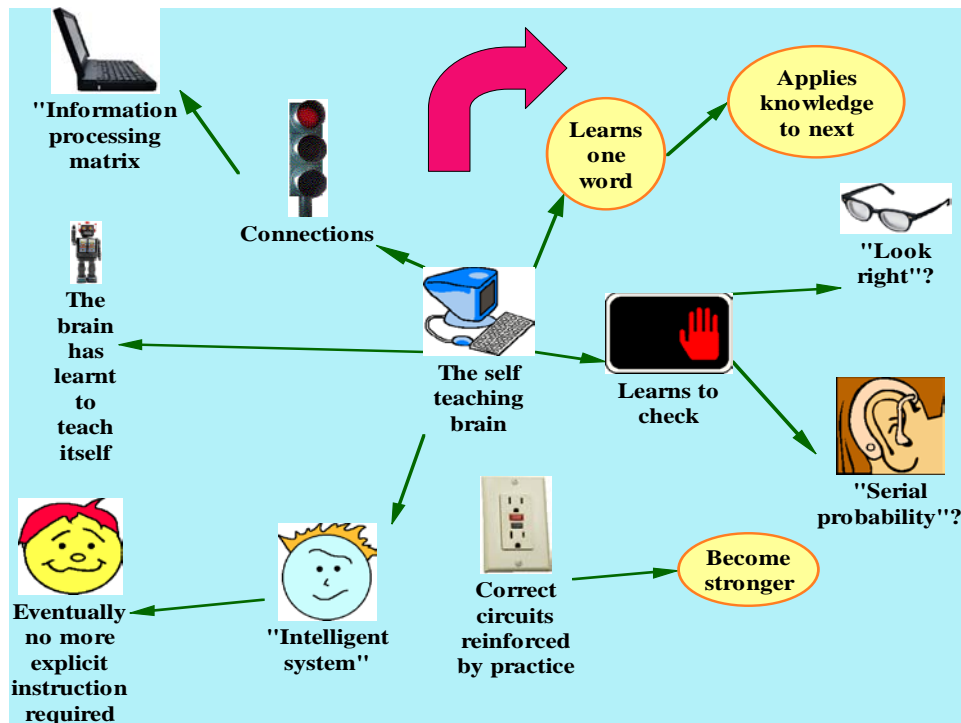
Programming required for:

- **Reading, writing and spelling**
- **Complex neural circuitry required to link specialised processing areas**
- **Reading circuits normally formed in left brain - 95% of us have left brain dominance modules for language**
- **Modules work together to achieve literacy tasks**

Reading writing and spelling are not “natural skills” and they require the development of complex neural connections in the brain. In the typical brain reading circuits are formed in the left brain – that is to say about 95% of us have left brain dominance for language. Teaching the brain to read develops different modules in the brain which work together to perform literacy tasks. Although most of the modules will be in the left brain, others are in the right side.

The "Self teaching brain"

- Specialist modules communicate with each other to recognise and read a word
- Brain uses this word to read other words
- Learns to ask questions:
 - Does it look right?
 - "serial probability" - the chances of certain letters going together?



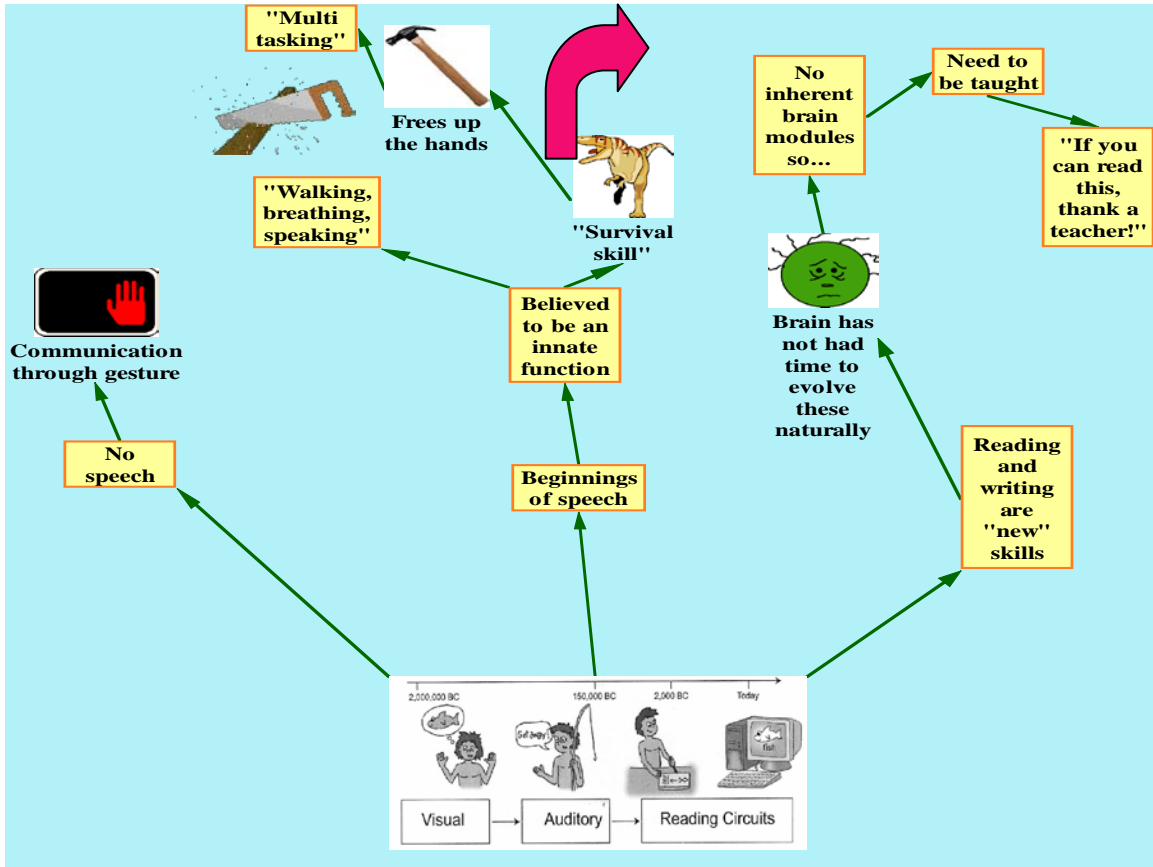
The self teaching brain learns a sound or a word and learns to apply it.

It also learns to check – does it “look” right, does it “sound” right? Serial probability is working out the odds that certain letter combinations will come together. For example, the vowel combination “ea” is common and typical – “read, leaf, seal” etc. On the other hand the vowel combination “ae” is not common and is usually only found in complicated scientific words like “haemoglobin”. So a child needs to learn that certain letter combinations are more likely than others and apply this knowledge to self check.

Practice definitely makes perfect! Hours of appropriate practice helps the brain to grow connections for recognizing words and sounds until, eventually, the connections become stronger and more efficient and the process become automatic.

Finally the brain develops its own information processing matrix which can be applied to a majority of words in a language, even words never seen before. In an instant the words are scanned, cross matched for known similar patterns and sounds and meanings are instantly available. The brain is now teaching itself and no more explicit instruction is required.

But it would be a mistake to assume that the ability to read and write is somehow innate or natural. Duncan Milne, in his excellent book “*Teaching the brain to read*” makes a strong case for reading and writing to be very “unnatural” skills which, in terms of human development are very new indeed.



This chart shows how communication through gesture and speech were the main forms of human interaction for millions of years. Therefore they can be considered to be innate functions – our brains are naturally hard wired for these processes. Babies respond to visual stimuli and “babble” without being taught, picking up visual and auditory cues as a natural process which leads to communication through gesture and speech. Learning to speak was particularly important historically since it freed up the hands to do other things at the same time – multi tasking became possible.

Reading and writing, on the other hand, are relatively new skills and the brain has not had time to evolve these naturally. Consequently the skills have to be taught. The invention of writing created need to read, and the invention of the printing press created the need for mass literacy - but there is no natural brain module for reading. So the module needs to be built across existing brain systems – specifically across visual and auditory modules - so reading is completely unnatural and artificial – but very, very important! Currently reading is the most effective way to acquire new information rapidly – though not for long as IT solutions become more effective. As technology improves we may return to a situation in which the ability to access information by reading becomes a

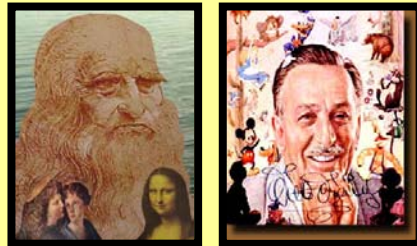
preference rather than a necessity and many people already prefer to have documents read to them through appropriate software since it permits multi tasking in a way reading does not.

However for the time being we are still in a culture in which the need to read is important and requires thorough teaching. However it should be understood that there is little intrinsic value in the reading process – it is only one way of gaining and passing on knowledge which has only been important for a relatively short period of time in terms of human development and it will become increasingly less important in the future.

Typical or Normal?

Symmetrical brains

- **Most brains are left side dominant - but not all**
- **Some are more balanced - which can make it easier to think creatively, but harder to learn to read**



In about 10% of a population, groups of cells move around the brain and disrupt “typical” development. This is normal in terms of diversity and, while affecting the development of reading and writing skills, was definitely not a problem in hunter gatherer days and for much of human history. Symmetrical brains can provide a tribe with different ways of thinking - making the link between finding dead animals at the bottom of a cliff and deliberately stampeding a herd in the right direction. They can also enable your dyslexic child to take an unconventional look at a problem or situation and come with an original approach. This approach may not always be appropriate, but at least the thinking is happening. Interestingly, many of our greatest scientists report unexpected difficulties with learning to read, perhaps because the hard wiring that made them brilliant in one area made them less effective in others.

So, to return to Dyslexia, the case is being made for a dyslexic brain being normal, but not necessarily typical.

Spotting the 'Unexpected?'

Often ability appropriate:

- **General development**
- **Levels of reasoning**
- **Personal skills**
- **Problem solving**
- **Spoken communication**



But often issues with some/all of:

- **Reading**
- **Spelling**
- **Organisation**
- **Sequencing**
- **Number**
- **Writing**
- **Short term memory**

Let us get back to the notion of “unexpected difficulties” in relation to abilities in other areas. Please appreciate that all dyslexic people are not necessarily gifted – but they often have ability appropriate skills in some areas which are at odds with the difficulties they may experience when learning basic literacy and/or numeracy skills. So it is reasonable to expect that a dyslexic child will develop normally – that is to say s/he will hit their developmental milestones within the very parameters that are recognized as “normal”. Indeed when anxious parents question psychiatrists about when is the “right time” for a child to walk, talk, stop wetting the bed, sleep through the night etc, the most professional answer is probably “When they do”! Level of reasoning, problem solving and personal skills are also usually at a similar level to their brothers, sisters and friends.

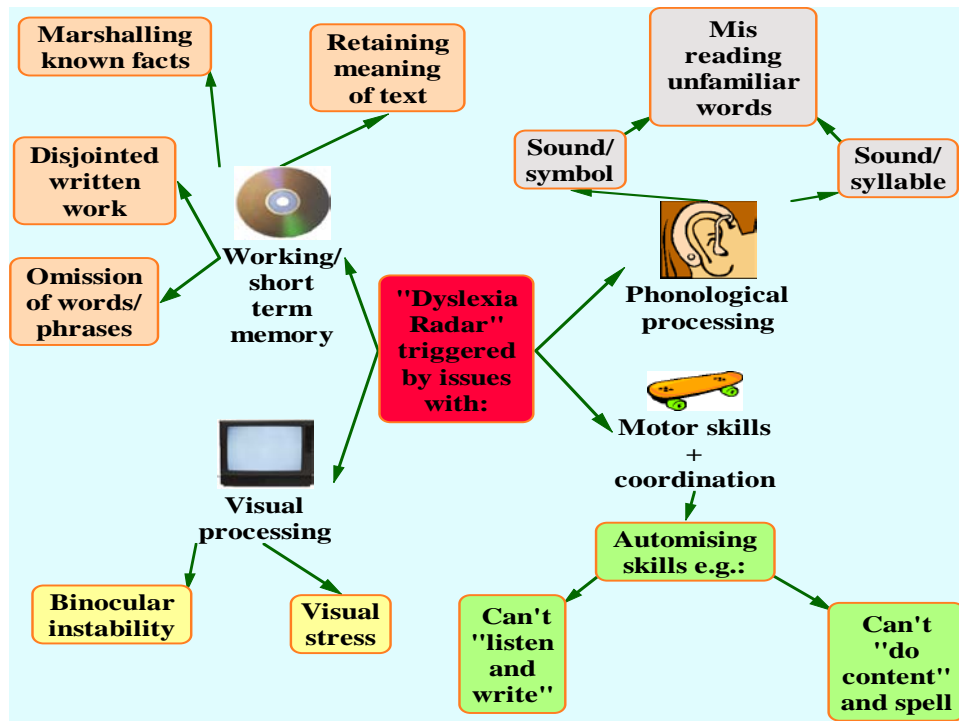
However reading and spelling may be slow to develop, despite conventional instruction and adequate opportunity to learn. Difficulties may also be noticed with remembering things in order and general organizational issues – packing Tuesday’s books on Friday! The memory and organizational issues are brought into sharp relief however when the task is important to the child. When they perceive something to be important, their memory and organizational skills are fine and it is quite revealing to observe a dyslexic child with a very memory for all sorts of mundane routines reminding a parent 3 hours later that an ice cream had been promised.

Summary

Issues - in relation to skills in other areas

- Reading, spelling & writing difficulties
- Problems learning and matching letters and sounds
- Problems with rhyme and word splitting
- Difficulties with some school subjects but not others
- Organising and sequencing difficulties
- Poor short term memory
- Slow speed of processing
- Poor information retrieval
- Ability-achievement mismatch

Developing "Dyslexia Radar"



There are four main areas of need which typify dyslexic learners:

1. Working short term memory
2. Phonological processing
3. Automising skills
4. Visual processing

Working short term memory

This is visual and verbal memory and is to do with remembering what is seen and/or heard long enough to do something with the information. Working visual memory is used to *look up* a phone number and *remember* it long enough to dial – working auditory memory is used to *ask* for a number and *remember* it long enough to dial. Weaknesses in either memory lead to problems with remembering what is being read, remembering how to spell and also holding a storyline when writing.

Phonological processing

This is the ability to match letter names and letter sounds (sound symbol correspondence) and also to match sounds and syllables. Some dyslexic learners find it almost impossible to hear certain sounds within words, despite no apparent problems with actual hearing. By the same token they may have 20/20 vision and yet jumble letter order in a word or word order in a sentence.

Automising skills

Dyslexic children will have difficulties on any task that requires automatising of skill. Even on a task where they appear to be performing normally these children have problems making skills automatic and need therefore to 'consciously compensate' even for simple skills. This means they often have to try much harder to achieve the same results or, sadly, to achieve poorer results than friends despite doing their very best.

In school and in the workplace this can be observed when dyslexics are required to write and spell at the same time – in this situation one or other of the processes will be deliberately marginalised to achieve the task – for example a decision may be made to use simple language which is easy to spell or to “go with the flow” and risk producing something which is very difficult to read.

Problems are also often experienced when dyslexics are expected to listen and write – perhaps in a lecture situation or maybe taking down phone messages. This process requires an ability to listen, remember in order and select the relevant information. However a typical strategy is to try and write everything down because of difficulties with working memory and information processing.

Visual Processing

Making sense of densely presented text is rarely something dyslexic learners do well, especially if the text is printed on white paper. The stark contrast between black font on white paper can result in visual stress, with words being blurred or actually moving on the page.

Binocular instability occurs when both eyes fail to focus properly on an image. Some learners prefer to close or cover one eye and training programmes can address this.

Each of the issues above is “ability/intelligence free” yet will have a major impact on performance at home, in school and in the workplace if support strategies are not put in place. “What to do if...what to do when...” will be discussed in detail in the A “Dyslexia Friendly Parenting”

Issues	Helpful responses
<ul style="list-style-type: none"> • Reading, spelling & writing difficulties 	
<ul style="list-style-type: none"> • Problems learning and matching letters and sounds 	
<ul style="list-style-type: none"> • Problems with rhyme and word splitting 	
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