MOVIES IN MY HEAD

VISUAL SPATIAL PROCESSING / GIFTEDNESS / DYSLEXIA: THE INTERFACE

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EXTRACT FROM THE VISUAL – SPATIAL LEARNER: AN INTRODUCTION
By Linda Kreger Silverman

Visual-spatial learners are individuals who think in pictures rather than in words. They have a different brain organization than auditory-sequential learners. They learn better visually than auditorially. They learn all-at-once, and when the light bulb goes on, the learning is permanent. They do not learn from repetition and drill. They are whole-part learners who need to see the big picture first before they learn the details. They are non – sequential, which means that they do not learn in the step – by – step manner in which most teachers teach. They arrive at correct solutions without taking steps, so "show your work" may be impossible for them. They may have difficulty with easy tasks, but show amazing ability with difficult, complex tasks. They are systems thinkers who can orchestrate large amounts of information from different domains, but they often miss the details.

The learning environment determines whether spatial processing becomes a liability or not, to some degree.

Highly visual spatial learners who **think in images rather than in words** may or may not have learning difficulties but if formal learning is presented in a linear, sequential way, the student may seem not to be able to achieve. They are likely to find step by step, rote learning, timed tests, practice, phonics, printing, spelling and organising difficult but **thrive on** abstract concepts, multidisciplinary studies, visual approaches, verbal reasoning, big picture learning and unusual ways of problem solving.

But some learners experience angst, even in a supportive learning environment.

- **For example, the poor speller with high ability who loves reading and is good at many things e.g. abstract thinking, spatial processing, visual memory**
- **Not being able to spell is a source of confusion for them and affects self esteem.**
- **Can't be dyslexia can it? Dyslexia is a reading problem, right?**
- **Well, no, not necessarily if you are gifted.**
- **Gifted children may read well silently and comprehend well. Oral reading and having to sound out words may be a different matter.**
- **Spelling may present as the main problem.**

Words spelt incorrectly draw more on visual memory than phonographic skills:

• **September**	**semter**	**sempber**
• **tomorrow**	**torrme**	
• **two**	**tow**	
• **house**	**huose**	
• **under**	**undr**	
• **sixteen**	**sixten**	

Quote from an adult artist:

- ***When spelling words I look at the symmetry – a word needs balance and then you can "see" it e.g. "spelling" has symmetry / balance***
- ***Scientific and political words do not have that "nice" look***

Spelling is harder than reading because it requires production – representing the spoken word in a written sequence of sounds.

- **Reading requires text to be decoded or recognised. Gifted visual spatial processors, including those with dyslexia, read intelligently and bring the right hemisphere into play.**
- **Adults and teenagers and some younger children have been able to articulate how they read.**

They say:

- ***I read chunks, not every word***
- ***I scan for key words only***
- ***I see a movie in my mind when I read a book***
- ***When I read aloud, I don't take in the meaning because I am trying to make it flow. When reading silently, I can picture it as I go. You don't have to make it flow.***
- ***I see possibilities as I read so I'm slower***
- ***I'm better if I speed up and miss out words (orally) or read in my head***

So when does reading become difficult for a student with visual spatial processing and / or dyslexia?

- **When they have to read orally and try to understand at the same time**
- **When there is no context for the reading so it is hard for them to create pictures**

SO WHERE DOES A SLD BEGIN AND VISUAL SPATIAL PROCESSING END?

- **Can be a subjective continuum**
- **Sometimes test scores very clear indication of dyslexia**
- **Can be grey areas especially with young children and older teenagers and adults**
- **Gifted people use compensatory strategies to hide or overcome their difficulty but huge energy toll can also mask giftedness**

DOES IT MATTER WHETHER IT IS DYSLEXIA OR JUST THE FLIP SIDE OF A VISUAL SPATIAL STRENGTH?

- **Not always BUT vital that the person gains self awareness of their brain strength and why they may find some things harder AND educators understand how they learn.**
- **If it is affecting their self esteem or if they would benefit from support in the exam system in secondary school, then it is helpful for them to be categorised with dyslexia.**
- **Some children and teenagers I know, have been very relieved to know they have dyslexia.**

TO IDENTIFY GIFTEDNESS IN VISUAL SPATIAL LEARNERS – NEED FIRST TO RECOGNISE THE VISUAL SPATIAL

- **When young, may know maps, geography, sense of direction**
- **May watch, hang back, seem reluctant to try straight away**
- **Have them silent read and retell (not oral and ask questions)**
- **Does well on complex tasks, poor on easier – may not know days or months or alphabet in order**
- **Test them in untimed situations**
- **May have great ideas but difficulty writing them down: *A teenager : thinks in whole stories, writes creatively. She needs time to incubate ideas, formulate a whole story and then start to write. She likes to get things perfectly formed. Found one sentence answers impossible.***

Are You a Visual-Spatial Learner?

Please complete this quiz to find out more about your child's learning style.

		Yes	No
1.	Do you think mainly in pictures instead of in words?		
2.	Are you good at solving puzzles or mazes?		
3.	Do you like to build with LEGOs™, K'Nex™, blocks, etc.?		
4.	Do you often lose track of time?		
5.	Do you know things without being able to tell how or why?		
6.	Do you remember how to get to places you have visited only once?		
7.	Can you feel what others are feeling?		
8.	Do you remember what you see and forget what you hear?		
9.	Do you solve problems in unusual ways?		
10.	Do you have a wild imagination?		
11.	Do you love music, dance, art or drama?		
12.	Can you see things in your mind's eye from different perspectives?		
13.	Do others think you are unorganized?		
14.	Do you love playing on the computer?		
15.	Do you have trouble spelling words correctly?		
16.	Do you like taking things apart to see how they work?		

If you answered **yes** to at least **nine** of the above questions, you are most likely a visual-spatial learner.

TO IDENTIFY THOSE WHO MAY HAVE DYSLEXIA AND ARE GIFTED

- Not name or sounds of letters
- Doesn't recognise rhyme (when young)
- Difficulty with spelling words, especially vowel sounds e.g. hame (home) – sometimes unrecognisable e.g. contitd (concrete)
- Difficulty with reading pseudowords (e.g. mafreatsun, feap)
- May mix or reverse b d p q z 6 / 9 later than other children

TO IDENTIFY THOSE WHO MAY HAVE DYSLEXIA AND ARE GIFTED (continued)

- **Play music by ear, can't read music**
- **Pencil grip clenched, upright**
- **West (1997) quotes a computer programmer: his handwriting is *closer to spiders dying than text***
- **Difference between drawing and writing**
- **Some have naming latency (dysnomia) – same phonological weakness as for reading – know word but can't retrieve quickly**
- **Discrepancies between scores on IQ tests, not the averaged out overall IQ score**

TO IDENTIFY THOSE WHO MAY HAVE DYSLEXIA AND ARE GIFTED (continued)

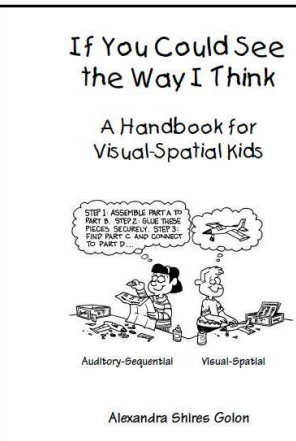
- Watch for problems with glare of paper or colours on whiteboard, blurry print, skipping lines, words moving on page and causing dizziness
- LASS screening 8 – 15 years i.e. Lucid Assessment System for Schools
- The Dyslexia Screening Tests – Early, Junior, Secondary, Adult (pearsonclinical.co.uk)

STRATEGIES / RESOURCES GIFTED VISUAL SPATIAL LEARNERS

- **visual-learners.com visualspatial.org**
- **giftedservices.com.au Articles by Lesley Sword: *The Power of Visual Thinking I think in pictures. You teach in words***
- **Let them watch and take time before doing (one boy said he creates models in his head before making them – he takes a piece out in his mind if it doesn't work and re-creates it)**
- **Keyboard skills and computer – *easier to think onto computer***
- **Give them the big picture, reason why**
- **Demonstrate – avoid lots of sequential instructions**
- **Teach visualisation**

STRATEGIES / RESOURCES GIFTED VISUAL SPATIAL LEARNERS (continued)

- **Spelling – cognitive (analogy, root, humour e.g. *cess pit* for necessary – Diane Montgomery) and learn in word families**
- **Discovery learning e.g. long division**
- **When writing, brainstorm onto sticky notes – order later**
- **Essay structure – look at finished essay and work backwards to analyse the structure**
- **Don't ask students to explain the steps**



STRATEGIES / RESOURCES GIFTED VISUAL SPATIAL LEARNERS WITH DYSLEXIA

- *Stealth dyslexia in gifted children* – B & F Eide slideshare.net (evade usual radar of detection)
- Coloured overlays, Kindle, colour of background and print
- *ldonline.org* included giftedness and dyslexia
- hoagiesgifted.org : Dyslexia, dysgraphia and dyscalculia OR Twice Exceptional

STRATEGIES / RESOURCES GIFTED VISUAL SPATIAL LEARNERS WITH DYSLEXIA (continued)

- *Earobics* designed to enhance auditory development and phonics (see realspecial.co.nz orlearningstaircase.co.nz) – this program is recommended by some audiologists
- *Lexia Strategies for Older Students 9 – Adult* - phonics, reading fluency, comprehension, vocabulary (see www.lexialearning.co.nz)
- A program such as *Word Q* - helps with spelling; can speak what the student types – use in conjunction with Word, PowerPoint etc.

SO VISUAL SPATIAL OR DYSLEXIA?

Thomas West wrote in "*In the Minds Eye. Visual thinkers, gifted people with dyslexia and other learning difficulties, computer images and the ironies of creativity*" that *…the complex of traits referred to as "learning difficulties" or "dyslexia" may be in part the outward manifestation of the relative strength of a different mode of thought….* This mode is visual-spatial, non verbal, right hemispheric, a way of thinking in images and seeing patterns. Some people may have achieved success or greatness not in spite of but because of their apparent disabilities. Those attuned to understanding visual systems may be better at creating new knowledge. He reports that Francis Galton, a famous 19th century scientist and mathematician thought in pictures or images. To explain his results to other people he had to translate thoughts into words and phrases. This slowed his writing and made his speech awkward. He had to prepare himself to speak.

Lesley Sword (2000)

Visual-spatial learners frequently have difficulty with language. In order to communicate their thoughts, first they have to grab particular images in their heads and place them in order. Then they have to hold them in memory. Then they have to find the words to describe their images. Then they have to hold the images of the words in order long enough to speak them aloud. This difficulty is magnified if they then have to write the words down. Letters must be placed in a particular sequence to spell words. Words must be placed in a particular order to make sentences. Sentences must be linked together in order to make paragraphs and paragraphs must be linked together to make essays and assignments. It is understandable why most visual-spatial learners that I see will tell me wonderful stories in rich and graphic detail and yet won't write them down.

Linda Silverman 2002

- ***How can you tell if a child has the typical learning differences of a visual spatial learner or if he or she actually has a learning disability? Visual-spatial can be a preferred learning style, or it can be so pronounced that a person has difficulty learning any other way.* (p164)**
- **If it is a preferred style, they can switch their brains to auditory sequential when necessary**

WHAT FUNDAMENTALLY INDICATES DYSLEXIA?

- My reading of research indicates strides being made e.g. through brain imaging studies BUT most conclusions still tentative. Previously most emphasis on phonological deficits. Now recognition of both orthographic and phonological deficits in dyslexia, linked to working memory as well as possible visual and auditory timing difficulties.
- Some evidence that if left hemisphere weak, can't hear all rapid changes in sounds that make up words and hold phonological forms of spoken words in working memory
- Reading and spelling both impaired in dyslexia. Writing problems may last longer than reading problems as both orthographic and phonological loops involved.

Orthographic coding

- Word forms i.e. Storing and processing written words and word parts
- Loop – connecting letters / written words ear to mind's eye to hand / fingers
- Orthographic working memory links word forms and the hand
- Assess orthographic loop with automatic (timed) writing of the alphabet

Phonological Coding

- Word forms – storing and processing spoken words
- Loop – connecting sounds in mind with mouth
- Phonological working memory links phonological word forms and the mouth
- Assess phonological loop with rapid naming of written stimuli

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