Upside-Down Brilliance:
The Visual-Spatial Learner

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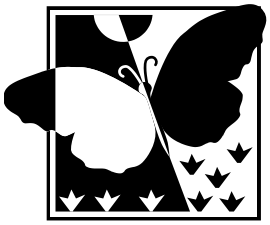
Are You a Visual-Spatial Learner?

Please complete the following quiz to find out more about your learning style.

		Yes	No
1.	Do you think mainly in pictures instead of in words?		
2.	Do you know things without being able to explain how or why?		
3.	Do you solve problems in unusual ways?		
4.	Do you have a vivid imagination?		
5.	Do you remember what you see and forget what you hear?		
6.	Are you terrible at spelling?		
7.	Can you visualize objects from different perspectives?		
8.	Are you organizationally impaired?		
9.	Do you often lose track of time?		
10.	Would you rather read a map than follow verbal directions?		
11.	Do you remember how to get to places you visited only once?		
12.	Is your handwriting difficult for others to read?		
13.	Can you feel what others are feeling?		
14.	Are you musically, artistically, or mechanically inclined?		
15.	Do you know more than others think you know?		
16.	Do you hate speaking in front of a group?		
17.	Did you feel smarter as you got older?		
18.	Are you addicted to your computer?		

If you answered *yes* to 10 of the above questions, you are very likely to be a visual-spatial learner.

From Silverman, L.K. (2002). *Upside-Down Brilliance: The Visual-Spatial Learner.* Denver: DeLeon Publishing.



Two Learning Styles

The Auditory-Sequential Learner	The Visual-Spatial Learner
Thinks primarily in words	Thinks primarily in images
Has auditory strengths	Has visual strengths
Relates well to time	Relates well to space
Is a step-by-step learner	Is a whole-part learner
Learns by trial and error	Learns concepts all at once
Progresses sequentially from easy to difficult material	Learns complex concepts easily; struggles with easy skills
Is an analytical thinker	Is a good synthesizer
Attends well to details	Sees the big picture; may miss details
Follows oral directions well	Reads maps well
Does well at arithmetic	Is better at math reasoning than computation
Learns phonics easily	Learns whole words easily
Can sound out spelling words	Must visualize words to spell them
Can write quickly and neatly	Much better at keyboarding than handwriting
Is well organized	Creates unique methods of organization
Can show steps of work easily	Arrives at correct solutions intuitively
Excels at rote memorization	Learns best by seeing relationships
Has good auditory short-term memory	Has good long-term visual memory
May need some repetition to reinforce learning	Learns concepts permanently; does not learn by drill and repetition
Learns well from instructions	Develops own methods of problem solving
Learns in spite of emotional reactions	Is very sensitive to teachers' attitudes
Is comfortable with one right answer	Generates unusual solutions to problems
Develops fairly evenly	Develops quite asynchronously (unevenly)
Usually maintains high grades	May have very uneven grades
Enjoys algebra and chemistry	Enjoys geometry and physics
Masters other languages in classes	Masters other languages through immersion
Is academically talented	Is creatively, mechanically, technologically, emotionally or spiritually gifted
Is an early bloomer	Is a late bloomer

The Visual-Spatial Learner: An Introduction

Linda Kreger Silverman. Ph.D.

Many teachers try very hard to accommodate the various learning styles of their students, but this can be an overwhelming task, as some of the learning styles inventories and models are quite complicated. As a former classroom teacher myself, I know that there are a limited number of hours in the day, and even the most dedicated teacher cannot plan for all the different learning styles and intelligences of his or her students. Take heart! There's an easier solution.

The visual-spatial learner model is based on brain research about the different functions of the hemispheres. The left hemisphere is sequential, analytical, and time-oriented. The right hemisphere perceives the whole, synthesizes, and apprehends movement in space. We only have two hemispheres, and we are doing an excellent job teaching to one of them. We need only become more aware of how to reach the other, and we will have happier students, learning more effectively.

I'd like to share with you how the visual-spatial learner idea originated. Around 1980, I began to notice that some highly gifted children took the top off the IQ test with their phenomenal abilities to solve items presented to them visually or items requiring excellent abilities to visualize. These children were also adept at spatial tasks, such as orientation problems. Soon I discovered that not only were the highest scorers outperforming others on the visual-spatial tasks, but so were the ***lowest*** scorers. The main difference between the two groups was that highly gifted children also excelled at the auditory-sequential items, whereas children who were brighter than their IQ scores had marked auditory and sequential weaknesses. It was from these clinical observations and my attempt to understand both the strengths and weaknesses that the concept of the "visual-spatial learner" was born.

Visual-spatial learners are individuals who think in pictures (or feelings) rather than in words. They have a different brain organization than auditory-sequential learners. They learn better visually than auditorally. 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. They tend to be organizationally impaired and unconscious about time. They are often gifted creatively, technologically, mathematically or emotionally.

Parents can tell if they have one of these children by the endless amount of time they spend doing advanced puzzles, constructing with LEGOs, etc., completing mazes, counting everything, playing Tetris on the computer, playing chess, building with any materials at hand, designing scientific experiments, programming your computer, or taking apart everything in the house to see how it operates. They also are very creative, dramatic, artistic and musical.

At the Gifted Development Center (GDC), we have been exploring the visual-spatial learner phenomenon for over 3 decades. We have developed strategies for working effectively with these children, guidance for parents on living with visual-spatial learners, and techniques to help visual-spatial students learn successfully through their strengths.

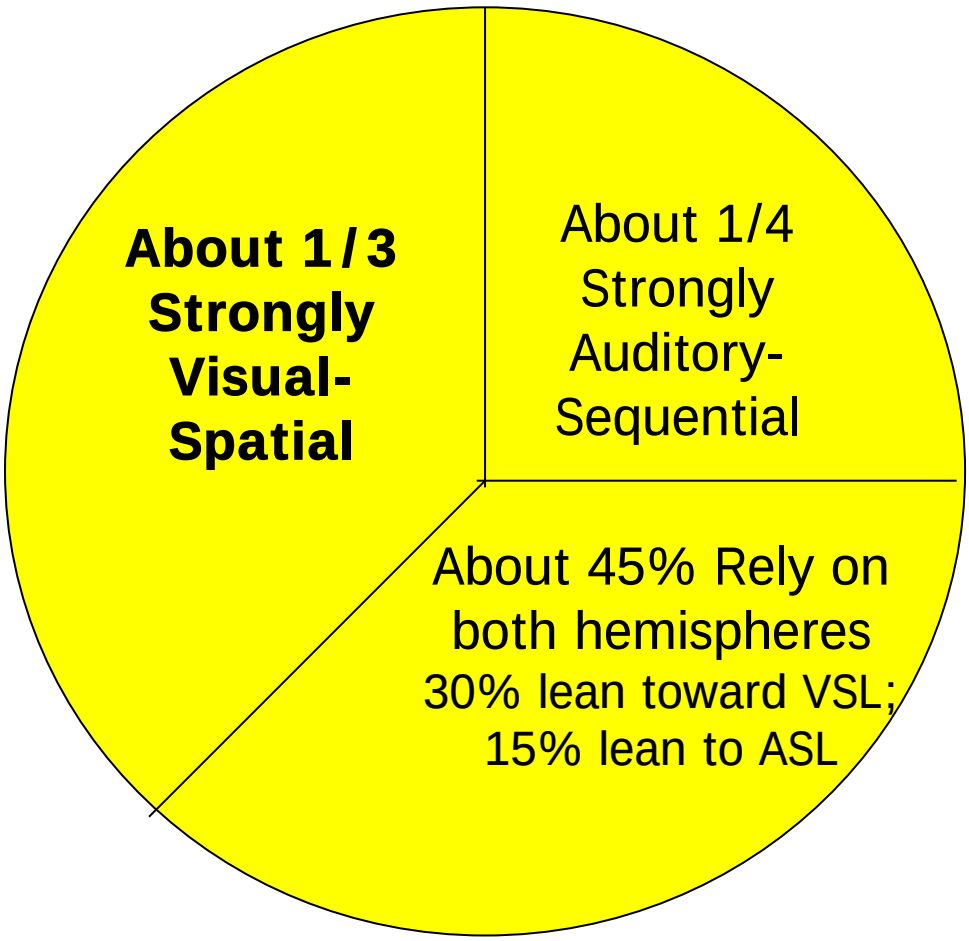
Over a period of nine years, a multi-disciplinary team created the *Visual-Spatial Identifier*—a simple, 15-item checklist to help parents and teachers find these children. There are two forms of the *Identifier*: a self-rating questionnaire and an observer form, which is completed by parents or teachers. The *Visual-Spatial Identifier* has been translated into Spanish. The two instruments were validated on 750 fourth, fifth and sixth graders in the United States. In this research, one-third of the school population emerged as strongly visual-spatial. An additional 30% showed a slight preference for the visual-spatial learning style. Added together, nearly two-thirds had a visual-spatial preference. Only 23% (less than one-fourth) were strongly auditory-sequential.

These validation studies were conducted in urban and rural settings, in which over 40% of the children were Hispanic. In one study, 69% of Native American children preferred the visual-spatial learning style. This suggests that a substantial percentage of the American school population would learn better using visual-spatial methods. Indigenous individuals in other countries also identify with this learning style. As the world population becomes more visually oriented, more of the world's students prefer visual-spatial instruction.

Three books on visual-spatial learners are available from GDC: *Upside-Down Brilliance: The Visual-Spatial Learner* by Linda Silverman, *Picture it! Teaching Visual-Spatial Learners* by Betty Maxwell and Crystal Punch, and *Visual Leap* by Jesse Berg [www.gifteddevelopment.com]. Free downloads of teaching strategies are available at www.gifteddevelopment.com and www.VisualSpatial.org.

An excellent book for adults on the difference between visual-spatial and auditory-sequential learning available in Dutch is Mechel Ensing and Coralien van Hattem's *Beelddenken en begripsdenken: een wereld van verschil.* Uitgever Free Musketeers V. V. Zoetermeer, 2014.

Research from the Gifted Development Center concludes:



The U. S. study included 750 4th, 5th and 6th graders, white and Hispanic, from urban and rural schools, all socio-economic backgrounds and all IQ ranges.

Why All Students Need Visual-Spatial Methods

Linda Kreger Silverman, Ph.D.

The first child I observed with unusual visual-spatial abilities was profoundly gifted (above 175 IQ). So I assumed that visual-spatial learners were profoundly gifted. Then, I discovered that children who fit the characteristics of giftedness, but did not test in the gifted range due to hidden learning disabilities, were usually visual-spatial learners. So I thought that visual-spatial learners were either profoundly gifted or twice exceptional (gifted with learning disabilities).

In 1991, I was asked to create a video on visual-spatial learners for the state of Missouri in the U.S. The Director of Curriculum was convinced that the information would be applicable in all subject areas and at all grade levels, from Kindergarten through 12th grade. I was uncertain at the time, but he turned out to be right.

When we developed *the Visual-Spatial Identifier*, a process that began in 1992 and took the better part of a decade, we still thought that a small percentage of the population would turn out to be visual-spatial learners. The results of the second validation study of our *Identifier*, in 2001, astounded us! Approximately one-third of the 750 students we had assessed in two schools were strongly visual-spatial and another 30% were moderately visual-spatial. That represented the majority of the school population!

As I was completing *Upside-Down Brilliance: The Visual-Spatial Learner*, published at the end of 2002, I realized more clearly what the brain researcher, Dr. Jerre Levy (1982), had meant: "Unless the right hemisphere is activated and engaged, attention is low and learning is poor." She was talking about every student in the classroom.

Throughout the book I hinted that the visual-spatial learner might soon have the edge in gaining employment. Tom West (1991), author of *In the Mind's Eye*, suggests that in the 21st century employees will require strong visual skills: "ready recognition of larger patterns, intuition, a sense of proportion, imaginative vision, the original and unexpected approach, and the apt connection between apparently unrelated things" (p. 88).

Daniel H. Pink (2005), author of *A Whole New Mind*, proposes that, now that information is readily available on the Internet, success in today's world is dependent on empathy, intuition, spirituality and right hemispheric-directed abilities.

> "In the United States, the number of graphic designers has increased tenfold in a decade; graphic designers outnumber chemical engineers by four to one. Since 1970, the United States has 30% more people earning a living as writers and 50% more earning a living by composing or performing music. … More Americans today work in arts, entertainment and design than work as lawyers, accountants and auditors." (p. 55)

I began thinking about how schools are preparing students for success in their careers. It is very likely that until the modern age the skills emphasized in school were necessary for achievement in adult life. However, the world is changing very quickly and our educational systems are not keeping pace. Success in school still depends upon:

- Following directions
- Turning in assigned work on time
- Memorization of facts
- Fast recall
- Showing steps of work
- Neat, legible handwriting
- Accurate spelling
- Punctuality
- Good organization; tidiness

What positions require the skills so heavily prized in school? These auditory-sequential skills are actually limiting the potential of all students to gain employment in today's world. Citizens of the 21st century are rewarded beyond school for:

- Ability to predict trends
- Grasping the big picture
- Thinking outside the box
- Risk-taking
- Problem-finding and problem-solving skills
- Combining one's strengths with others' to build a strong team
- Computer literacy
- Dealing with complexity
- Ability to read people well

Isn't it time we recognize the importance of right-hemispheric abilities and provide *all* students the opportunity to develop their visual-spatial skills? These skills are essential to their success in adult life. To continue to prepare students for jobs in the 20th century is limiting their potential instead of enhancing it. One of the central functions of school has always been to prepare the citizenry for gainful employment.

Are we missing the mark?

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For more information, see Visual-Spatial Resource website: www.VisualSpatial.org