

Gifted Children Is your child Gifted?

Dr Linda Silverman, the pioneer of the Visual Spatial Learner concept identifies two types of gifted visual spatial learners. The first is children identified as gifted who score extremely high on an IQ test because of their great ability both with tasks using visual spatial processing and those requiring auditory sequential thinking processes. The second is children who are brighter than their IQ scores, who have great ability in visual spatial processing and marked weaknesses in auditory sequential processing. These children are often not identified as gifted and they struggle at school because their intelligence is not recognised and neither is their unique learning style. The second type of gifted visual spatial learner who is "at risk" in the school environment unless their learning style is identified and appropriate modifications are made to learning and teaching practices.

The visual spatial style appears to be hereditary. In all the visual spatial learners I have seen, there is always at least one parent who shares this learning style with the child. However, it can also originate as compensation for auditory sequential processing difficulties associated with multiple ear nose and throat infections in early childhood (Silverman, 1998).

Visual-Spatial Thinking

Increasingly, educators are recognizing that the process of learning is critically important and understanding the way that students think and learn is the key to educational improvement.

At the most basic level, differences in individual thinking and learning styles correspond to the three principal senses: vision, hearing and feeling. Thinking in the visual system uses pictures, colors, abstract plans, diagrams etc. The auditory system uses sounds, conversations, rhythm, melody etc. The kinesthetic system uses information of a feeling nature - balance, weight, temperature, emotional state, "gut" feeling, intuition etc.

Spatial & Sequential Thinking

Spatial and sequential thinking are two different mental organizations that affect the way people view the world. Sequential thinking is step by step linear thinking over time, while spatial thinking is an holistic system where all knowledge is interconnected in space. Auditory thinking is associated with sequential thinking and visual-spatial thinking is associated with spatial thinking.

The sequential system involves analysis, progression from simple to complex, organization of information and linear deductive reasoning. It is influenced by

hearing and language and an awareness of time. In contrast, spatial thinking involves synthesis, an intuitive grasp of complex systems, (often missing the steps) simultaneous processing of concepts, inductive reasoning (from the whole to the parts), use of imagination and generation of ideas by combining existing facts in new ways (creative thinking). It is influenced by visualisation and images and an awareness of space.

Visual-spatial thinking is the hallmark of creativity and visual spatial learners usually gravitate to the creative professions eg. art, design, architecture, computer programming, graphics, animation, physics. However, this style of learning may not be understood in an educational environment which favours logical thinking and having the right answer.

Traditional teaching techniques tend to be designed for auditory sequential learners. Concepts are introduced in a step-by-step fashion, practiced with drill and repetition, assessed under timed conditions, and then reviewed. This process is ideal for sequential learners whose learning progresses in a step-by-step manner from easy to difficult material. For visual spatial learners, concepts are rapidly understood when they are presented within a context and related to other concepts. Once spatial learners create a mental picture of a concept and see how the information fits with what they already know, their learning is permanent. Repetition is completely unnecessary and irrelevant to their learning style. Visual thinkers and learners can literally see pictures in their heads while auditory thinkers and learners hear streams of words.

In my experience, gifted people have a preference for visual spatial thinking because it is faster and most powerful than auditory sequential thinking. Visual-spatial thinking is approximately eight times faster than auditory thinking. It is rich, textured, creative, problem finding and problem solving.

Try this simple task. Look at a picture. You were able to process all the information in that picture instantaneously, taking in the detail, colour, texture, the arrangement of the content and the relationships of the objects. Now, look at the same picture and describe it in words aloud as if you were telling another person who wasn't looking at it. Did you have to stop and decide where to begin? How much longer did it take? Did you give up before you finished? Do you think a person listening to your description will have the same amount and type of information as you had by seeing the picture?

Spatial Thinking & Intelligence

Children and adults who score highly on an IQ test do so because of their great ability both with tasks using visual spatial processing and those requiring auditory

sequential thinking processes. In a classroom situation they will prefer to use their powerful visual-spatial thinking but they can fall back on their auditory sequential thinking if necessary.

However, there are some people who are more intelligent than their IQ scores reveal. These gifted people have great ability in visual spatial processing and marked weaknesses in auditory sequential processing. As children these people are often not identified as gifted and they struggle at school because their intelligence is not recognized and neither is their unique learning style. These gifted people are "at risk" in a school learning environment unless their visual-spatial thinking learning style is identified and appropriate modifications are made to teaching and learning practices.

As is the case with intelligence, the visual spatial learning style appears to be hereditary. I have now identified hundreds of gifted children who have an extreme visual spatial learning style and there is always at least one parent who shares this learning style with their child. However, an extreme visual spatial learning style, coupled with a marked weaknesses in auditory sequential processing, can also originate as compensation for auditory sequential processing difficulties associated with multiple ear nose and throat infections in early childhood.

Sequential Processing Weakness

When high intelligence is coupled with an auditory sequential processing weakness, they tend to cancel each other out so that neither the giftedness nor the weakness is readily apparent. In a school situation, gifted people use their intelligence to compensate for their auditory-sequential weakness. This compensation requires constant effort which drains them of energy and is a source of stress. When they are tired, stressed, anxious or ill, their ability to compensate disappears, leaving them without a reliable mechanism for learning.

Also, while compensatory strategies can work well in the short term, they are not effective in the longer term as it is not possible to sustain the effort required. This means that, as these students progress through school, their performance diminishes even though they are making considerable effort. Despite their high intelligence, these students often assume that they are "dumb" and that there is something wrong with them as a person. The result is continuous underachievement, lack of motivation and low confidence and self esteem.

To teachers they often appear to be bright children who could do better if only they would concentrate more, focus more, not be so destructible and try harder. These students struggle to achieve and with each passing year the

struggle gets harder until finally they give up. Without identification and appropriate intervention and modifications, these students frequently leave school before year 11.

Everyone has a thinking and learning style: intrinsic information-processing patterns that represent a person's typical mode of perceiving, thinking, remembering, and problem-solving. The challenge for educators today is to assess the thinking and learning style characteristics of all of their students, not only their gifted students, and to provide teaching that is compatible with those characteristics. When educators recognize and accommodate the preferred learning style of their students, improved attitudes toward learning and an increase in productivity, academic achievement, and creativity can result.