Visual-Spatial Defined

Visual-Spatial Thinking Defined

Visual-spatial thinking is the ability to perceive the visual information in the environment, to represent it internally, to integrate it with other senses and experiences, to derive meaning and understanding, and to perform manipulations and transformations on those perceptions. It is the first language of the brain.

The Benefits of Visual-Spatial Learning

People with highly developed visual-spatial skills pay more attention to the world around them. They notice and appreciate the details of life: the architecture of the buildings in their towns, the kinds of trees in their neighborhoods, the ugly litter that mars the countryside. Visual-spatial skills give people the ability to negotiate well in space: to follow maps, move easily through a forest trail, or maneuver a car into a tight parking space. People need highly developed visual-spatial skills to work in fields such as architecture, engineering, mathematics, geology, sculpture, computer science, aviation, forestry or cartography, but all people, regardless of profession, benefit from strengthening their visual-spatial thinking.

In a world where a confusing array of visual information from television, video games, billboards, and advertisements of all type continually bombard our senses, people with highly developed visual-spatial skills are able to make sense of the chaos by "sorting out" the distracting images and focusing on the beauty in nature or pleasing architectural detail. Those who haven't learned the ability to sort through visual images often stop paying attention to the details in the world around them as a way to guard against visual overload. This is unfortunate since much of the enjoyment of the world is also missed as a result, and many of the visual problems needing to be solved are ignored or over-looked in our communities.

All people could benefit from a greater emphasis on visual-spatial learning in our public school curriculum, but there is an alarming lack of information currently available for teachers, especially teachers of preschool and elementary children. Howard Gardner, well-known professor of education at Harvard University puts it this way:

"Though the centrality of visual-spatial intelligence has long been recognized by researchers who work with adult subjects, relatively little has been definitively established about the development of this set of capacities in children."

The lack of emphasis on visual-spatial learning in our school systems has led to a number of problems. Women are not being encouraged to develop visual-spatial skills when they are young girls and are therefore under-represented in fields such as architecture, engineering, forestry or higher-level mathematics. Children who are naturally visual-spatial learners are often not recognized as such and are sometimes falsely labeled as learning disabled. Children with verbal language delays and disabilities like autism or attention deficit disorder often have innate visual-spatial ability that is not being validated or encouraged. Many children would benefit if teachers and parents better understood the importance of visual-spatial learning. Much heartache and school failure could be avoided, and our communities would likely become filled with more people who valued and nurtured the world around them.

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Dimensions' Research: Children's Visual-Spatial Work

Through on-going analysis of teachers' visual notes (a technique borrowed from architectural note taking), as well as experimentation, close observation and discussion with teachers, researchers and consultants, patterns emerged that led Dimensions to identify three key focuses of the research. These three broad categories that help us think about children and visual-spatial learning are: building, nature and purposeful movement.

Building: Through their visual-spatial work children are able to explore and manipulate three-dimensional materials, developing and practicing many different skills simultaneously (e.g., construction, engineering, kinesthetic, math, literacy, social skills). They are also communicating their knowledge of the world (often before they have the ability to verbalize it), and learning to communicate, process and manage emotions. Children's visual-spatial work is a language. Through building children can practice abstract thinking in a concrete medium.

Nature: In terms of visual-spatial skills, nature provides powerful opportunities for all children to develop close observation skills; notice details, colors, patterns and textures, see things from multiple perspectives and levels; learn about pathways, space, scale relationships, whole-part relationships; experiences area, volume and perimeter; estimate distance, even visually observe the seasons change. Children with special needs (who are often strong visual-spatial and kinesthetic learners) and those with behavioral challenges are often very successful learners outdoors because they have the freedom to interact with natural materials in a myriad of ways.

Purposeful Movement: The need for children to move their bodies is evident when children build full scale structures that they could physically play on or in, and in their creation of objects that move or have moving parts. Children with behavioral challenges often need purposeful movement to help them focus and to calm them. Purposeful movement helps children develop body competence, learn to negotiate objects and their bodies in space and internalize their learning through the development of muscle memory. Children often convey messages through their body movement that they are not able to express in other ways.