Classroom Identification of Visual-Spatial Learners

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The visual-spatial and auditory-sequential learning model is providing parents and teachers with a whole new way of thinking about how children acquire, process, and communicate ideas and information. Elsewhere in this issue of the *Communicator*, Dr. Linda Silverman offers an account of the origins and development of this complex and exciting new field. She also comments on the broad implications for educational theory and practice (see also *Upside-Down Brilliance: The Visual-Spatial Learner*).

In the classroom setting, however, how can a teacher tell the visual-spatial learners (VSLs) from the auditory-sequential ones? Ask a teacher about VSLs in her classroom and she might say that she had one last year, but that she thinks that Mr. Smith down the hall may have two or three of them this year. It might surprise that teacher to learn that recent research at the Gifted Development Center in Denver, Colorado, has shown that about one-third of all nine to thirteen-year-olds in the general population (not just the gifted) are strongly visual-spatial, while a little under one-fourth are strongly auditory-sequential. Of the rest in the middle with more balanced strengths, those who show a tendency toward visual-spatial outnumber their auditory-sequential classmates two-to-one (Haas, 2001).

Every good teacher has ways to size up students to get an idea of what approaches might work well with each child. And deciding what a child's preferred learning style is can provide the key to effective teaching. This article begins with some of the indicators I turn to, the strategies I have come to use and trust, which have been developed from eleven years of experience as a classroom teacher of math and science in middle school and high school.

But the exciting news is that teachers no longer have to rely solely on these personalized, *ad hoc* methods for identifying VSLs. There is now an easy-to-use, fully-validated, one-page questionnaire that will assist the classroom teacher in figuring out the learning style of each child in the class. This article provides an overview of that more solid and comprehensive method of identifying VSLs that has been carefully researched, developed, and statistically validated over the last ten years.

A Few Good Tricks

Within the first couple of days of class, in August, certain kinds of kids catch my attention as possible VSLs. For instance, a student who catches on quickly and gets the right answers on homework, but whose handwriting looks more like chicken scratches or hieroglyphics is a likely candidate. The student's flow of ideas in problem-solving is more likely a rushing torrent than a nicely-behaved and channelled stream. Also, while circulating around the room during direct instruction, I like to see what kind of notes a student is taking. I'm drawn to the doodlers. Sometimes, of course, doodling just means that the student has tuned out the lesson and is dreaming of being in art class instead of science. But VSLs can also be active doodlers, not concept-mappers as we would wish, but just doodlers whose curly-queues ebb and flow with the lesson. Those doodles are actively connecting the right side of the student's brain with the concepts covered in the lesson.

Then there is the student whose notebook is blank, and so is his face, as he gazes, usually up and to the side, out the nearest window. "Billy! Pay attention and start taking notes!" may be just the right tweak to get the daydreamer back on task. But for the VSL, gazing up and to the side is where he stores and can access complicated conceptual material in mental visual file folders. While he may appear to be daydreaming, he may actually be actively inputting and processing the lesson. By jolting him out of his trance, you may have just burst his concentration bubble.

Sometimes, I play a game with students that I call "Flip-Turn." All it takes is any textbook-size book. Lay the closed book in front of the student in a position as if it were to be opened. The rules are simple. A flip means reach over, grab the left side of the book and flip it over to the right; a turn means rotate the book clockwise 90 degrees. Then, start out with a single command, like "Flip!" Have the students move the book into the correct position. Then try a double command, like "Turn, flip!" Again, have the students move the book into position, but directly, WITHOUT going through each step. Most auditory-sequential types can handle two commands, but at three or four, they fall apart. VSLs "see" it move in their mind's eye and then just put it in the correct position.

Identification of Visual-Spatial Learners

While these gimmicks may be fun, and even have some success in identifying VSLs, a more systematic and comprehensive, less-quirky method was needed. Over the past ten years, a multidisciplinary team of psychologists, reading specialists, gifted program coordinators, therapists, teachers, tutors, mentors, parents, and artists developed a written instrument for the identification of visual-spatial learners (Haas, 2001). The group generated and piloted hundreds of items, and in the end, 15 questions emerged from the studies as being able to differentiate clearly between auditory-sequential and visual-spatial learners.

The *Visual-Spatial Identifier* (VSI) consists of two separate forms: a self-rating questionnaire for the student, and an observer form, which is completed by parents and teachers. It contains fifteen questions, with responses from 1 ("not true") to 5 ("very true"). The *VSI* has been validated for white and Hispanic boys and girls, ages 9-12, in both urban and rural school districts. Both forms have been translated into Spanish. The scoring and interpretation protocol provides a comparison of an individual student's score and profile with students of the same age, gender, and ethnicity. It can define a student as predominantly a VSL or an ASL, and the degree of confidence in that judgment. It can be used to assess groups as well as individuals.

The object of the group's research was to identify the broad category of visual-spatial learners without limiting itself to any subset of that group. It did not, therefore, restrict itself to just the gifted, nor did it examine in any special way the characteristics that manifest themselves in the study of mathematics. As mentioned above, that research shows that more than one-third of students in the general population show a strong preference for a visual-spatial learning style.

The next stage of the research is gradually to extend the age range of the instrument and validate the *VSI* for 3rd and 7th graders in different parts of the country. It will also be validated with Native American and African-American populations. The *VSI* was presented in August, 2001, at the 14th world Conference of the World Council for Gifted and Talented Children in

Barcelona (Haas, 2001). Since then, there have been numerous requests to expand the validity to other countries and cultures in the English-speaking and Spanish-speaking communities.

Use of the *VSI* with the Gifted

While use of the *VSI* is not restricted to gifted populations, gifted educators and parents of gifted children have been particularly drawn to it. Perhaps that is because of the apparent predominance of the visual-spatial learning style at higher levels of the intelligence pyramid. Preliminary research findings with the *VSI* indicate that gifted children are even more likely to be visual-spatial than average children. These findings support earlier research (Hafenstein, 1986), in which giftedness was more correlated with simultaneous (visual-spatial) than sequential processing. Clinical observation at the Gifted Development Center also substantiates the correlation between giftedness and visual-spatial abilities. Even those gifted children with strong verbal abstract conceptual reasoning also demonstrate high visual-spatial reasoning.

The *VSI* gives regular classroom teachers a strong analytical tool for assessing the dominant learning style of their students. It can revolutionize instruction in the classroom. In one example, an elementary school in the Jefferson County Public School system in Colorado had all their 4th, 5th, and 6th grade students assessed and a workshop provided to teachers about the meaning of the results. In a follow-up six months later, the principal reported a groundswell of interest among the faculty in adapting lessons to make them more accessible and interesting to their visual-spatial students.

With gifted students, the repercussions should be all the more dramatic, because of the preponderance of visual-spatial learners in the gifted range. Instruction will be more tailored to the needs of those gifted VSLs. But equally important, more and more gifted visual-spatial students will finally be identified as gifted who are currently being missed by a system biased towards auditory-sequential learners.

NOT TO BE ADMINISTERED IN THIS FORMAT

Please contact *www.gifteddevelopment.com* for original formatted Visual-Spatial Identifiers in either English or Spanish.

Visual-Spatial Identifier

(Observer Report)

If a teacher is filling out this form, it would be best if the teacher sees the student at least three times a week. Please indicate the degree to which the following descriptors apply: 1 = not true 2 = somewhat true 3 = mostly true 4 = true 5 = very true

1. Dislikes public speaking	1 2 3 4 5
2. Thinks in images instead of words	1 2 3 4 5
3. Is a good speller (NOT)	1 2 3 4 5
4. Does not budget time well	1 2 3 4 5
5. Resists demonstrating what she or he knows	1 2 3 4 5
6. Has trouble with timed tests	1 2 3 4 5
7. Has neat handwriting (NOT)	1 2 3 4 5
8. Is extraordinarily imaginative	1 2 3 4 5
9. Takes things apart to find out how they work	1 2 3 4 5
10. Is frustrated with writing assignments	1 2 3 4 5
11. Solves problems in unusual ways	1 2 3 4 5
12. Oral expression is much better than written expression	1 2 3 4 5
13. Reaches correct conclusions without apparent steps	1 2 3 4 5
14. Is well organized (NOT)	1 2 3 4 5
15. Memorized math facts easily (NOT)	1 2 3 4 5

For general information purposes only, a copy of the list of questions from the Observer Report of the *VSI* is provided above. Referring to these questions can help guide the classroom instructor to consider the most pertinent issues in determining a student's learning style preference. One should not attempt to administer the *VSI* in this revised format. In its original formatting, which has been statistically validated, questions 3, 7, 14, and 15 appear without the reversal, in order to enhance statistical reliability of the instrument. In addition, raw scores obtained from the *VSI* must be appropriately scaled against profiles matching a student's age, gender, and ethnicity. For complete scoring and interpretation, please consult the website of the Gifted Development Center at www.gifteddevelopment.com.

References

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