

Visual Thinking Strategies Improve Observational Skills among Miller School Students, Study Finds

Medical schools including the Miller School of Medicine have recognized the benefits of visual arts training for students and residents and have started to include it in the curriculum. A new Miller School study published in the August issue of the *Journal of Medical Humanities* found that Visual Thinking Strategies, a facilitated method of guiding students in analyzing a preselected piece of visual art, positively impacted the total number of words students used to describe clinical images, the time they spent analyzing the images, and the number of clinically relevant observations they made.

There is ample evidence in the K-12 educational literature supporting Visual Thinking Strategies (VTS), which was founded in the late 1980s, as a methodology for the analysis of art. VTS has also been shown to increase empathy, tolerance of ambiguity, observational skills and sense of well-being. Participants in prior studies were a self-selected group of medical students and results were presented without a comparative group.



Participants in the Fine Art of Health Care at the Lowe Art Museum.

“For many years, we have felt that the use of visual art could enhance skills in medical students, and we were able to include it in the formal curriculum of the M.D./M.P.H. students,” said study lead author Gauri G. Agarwal, M.D., associate dean for clinical curriculum at the Miller School of Medicine. “With the help of a supportive grant, we were finally able to assess the impact of the intervention in a non-self-selected group of students and obtain comparative student volunteers with our M.D. students who did not experience the visual arts curriculum.”

The study was co-authored by Meaghan McNulty, M.D., M.P.H., an internist, and the Miller School’s Katerina M. Santiago, M.P.H., research support specialist; Hope Torrents, museum educator at the University of Miami’s Lowe Art Museum; and Alberto J. Caban-Martinez, D.O., Ph.D., M.P.H., C.P.H., study senior author and associate professor of public health sciences at the Miller School.

In addition to increasing the number of words used by the medical students to describe clinical images and the time spent analyzing the images, the VTS training also resulted in an increase in the number of general observations and clinically relevant observations.

A total of 41 intervention students who are enrolled in the M.D./M.P.H. program at the Miller School, and 60 comparative students who are enrolled in the M.D. program, participated in the study. The study examined the analysis of clinical images followed by a measurement of word count, length of time analyzing images, and quality of written observations of clinical images.

“Implementing and evaluating different teaching modalities that enhance our M.D. and M.D./M.P.H. curricula particularly for methods and skills geared to improving their clinical communications skills is paramount,” said Dr. Caban-Martinez. “These skills are essential early on to provide a foundation in clinical communication both vertically and horizontally between the health care team and their patient population.”

To assess the effectiveness of VTS in the medical education curriculum, a pre- and post-test experimental study design was used to evaluate the impact of participating in VTS workshops on first-year medical students.

To the knowledge of the co-authors, this is the first study to assess the impact of visual arts training on analysis of clinical images beyond the physical exam, using a non-volunteer cohort of first-year medical students and a comparative group. According to the study, there appears to be a clear impact from even short exposure to this type of

training, and that supports greater inclusion of visual arts training in the curriculum at the Miller School and nationally.

VTS was co-founded by Abigail Housen, Ed.D., and Philip Yenawine, co-founder and creative director of the Watershed Collaborative, and is grounded in Housen's Theory of Aesthetic Development. According to Housen, the theory shows that if learners are exposed to a carefully sequenced series of visual art works, their way of interpreting images changes in a predictable manner in which growth in critical and creative thinking accompanies growth in aesthetic thought.

One of the goals of VTS and of clinical medicine is to train students to expand their visual fields to more carefully observe their patients, develop situational awareness, and detail their observations. Participation in VTS sessions requires students to communicate their observations clearly and to listen carefully to the input of others in the group.

VTS has been used at the Miller School of Medicine for several years within a group of about 50 first-year medical students in the M.D./M.P.H. dual degree program.

"The idea that students from different health care disciplines can look at the same art image and see different things has significance when looking at a patient and coming up with a differential diagnosis," said Torrents. "Students in nursing, medicine, physical therapy and psychology come to the museum and participate in discussions about works of art. The playing field is leveled. Collaboration and communication are key to interpreting what is going on in a work of art."

The training is included in the course “Introduction to the Medical Profession,” which introduces students to the medical humanities. The course includes an overview of VTS methodology, followed by participation in two three-hour VTS sessions at the Lowe Art Museum.

“We feel the inclusion of visual arts training and the humanities in medical education has a large number of benefits for students, such as improving their own wellness and reduction of bias, but we have seen it can also objectively train them to spend more time analyzing an image and picking out the clinically relevant features,” Dr. Agarwal said. “Ultimately, we want this to be meaningful for patients, and hope this leads to them spending more time with patients and discovering the critical details that lead to improved care.”