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UNIVERSITÀ DI ROMA

## Art as Learning Tools for Medical Education

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E-ISSN 2531-7288  
ISSN 0394/9001



### MEDICINA NEI SECOLI

Journal of History of Medicine  
and Medical Humanities

35/2 (2023) 27-34

Received:

Accepted:

DOI: 10.13133/2531-7288/2772

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### ABSTRACT

#### **Art and Medical Education**

The literature has identified promising findings regarding the application of methodology using visual art to develop the cognitive skill of observation and description to enhance critical thinking among medical students. Colleges and Universities across the United States are applying different method and practice in medical education with positive results. The introduction of Medical Humanities (MH) also in Italy is stimulating the use of the humanistic approach and the Arts in the Medical Education sector for the formation of reflective thinking and the development of empathy. In this contribute we present the Italian experience and results about using art as learning tool in different space of medical education: in the medicine and nursing curriculum, in Family Medicine course, in Hospital and palliative care training.

**Keywords:** Visual Art - Medical Education - Skills - Burnout

## Introduction

The arts have proved to be a very important resource for psychophysical well-being. Research has shown that exposure to the arts allows the reduction of stress, the increase of self-reflex and self-awareness, the modification of behaviour patterns, the normalization of heart rate, blood pressure or even levels of cortisol<sup>1,2</sup>.

That the arts are useful in the context of well-being and health is also mentioned in a WHO document that reports more than 300 experiences conducted in Europe<sup>3</sup>.

The arts and in particular the Visual Art can be used as a learning tool. In the medical and health sector, it is part of the medical humanities and studies for the development of methods useful for improving the skills and abilities of care personnel. There are several skills useful for health professionals such as physical examination skills (inspection), critical thinking, empathy, teamwork, communication, tolerance of ambiguity, resilience. The Medical Humanities approach is achieved by “importing” the human sciences into medical education, including disciplines such as theatre, literature, music, visual art and the history of human sciences related to the health sector. Art in the field of medical education can bridge the gap between the doctor and his patient through the development of empathy, improve observation and listening skills, improve communication, including inter-professional, promote resilience, limit the Burnout<sup>4</sup>.

## Art and medical education

How can we use art in the medical area? Usually if we talk about health we think of art therapy but speaking of the learning sector we can refer to other goals that can be achieved with this discipline. If one retraces the history of art and medicine, it is possible to discover the important relationships between these two disciplines over the centuries. In art we can find the representations of treatment and illness useful for the development of skills and competences for health professionals<sup>5</sup>.

In addition, the study of pathology in art, iconodiagnostics, was considered useful by the doctors themselves in the past to exercise their ability to observe and diagnose<sup>6</sup>.

The exercise of observing art can help the health professional to understand how perception works and how important it is how much time must be taken with the patient to understand his state and identify useful details for a correct diagnosis<sup>7</sup>.

The one who is an important reference for medical art is Hippocrates who in the fifth century B.C. introduced the dimension of observation of reality, an attitude that is linked to the biopsychosocial approach that is required of doctors today<sup>8</sup>.

Since the 1980s, large universities such as Harvard, Yale and New York have been introducing art-related activities in the United States. Very interesting is the collection of the University of Dallas which collects courses every year in the various universities and specializations<sup>9</sup>.

In Europe, one of the first experiences was achieved by the University of Cork which included courses involving art in the curriculum of medicine, dentistry and nursing, and in particular the adoption of the Visual Thinking Strategies (VTS) method that uses art as a method. learning<sup>10</sup>.

In 1988, the studies of Abigail Housen, a cognitive psychologist, joined those of the museum educator Philip Yenawine. Together they understand the potential that the observation of art can arouse in the development of important cognitive skills. Starting from these premises, they fine-tune the teaching method of Visual Thinking Strategies applied at the school and at university and in lifelong learning<sup>11</sup>.

### **Art and medical Education in Italy**

Before 2014 the presence of humanities is poorly included in the medical curricula of Italy. Even though history of medicine and bioethics are offered in almost all universities as a compulsory subject, the limited number of ECTS credits, and their lack of consideration as independent subjects preclude its key role in the training of physicians<sup>12</sup>. During the last year the interest of Medical Humanities is suggesting the implementation of course in medical and nursing curriculum using arts, literature and social sciences. So it is possible register the first experience of using visual art in medical education as a format for activities designed by Director of Art and Medical Humanities Lab of Sapienza University in University Courses of Medicine and Health Professions, in Specific Training in General Medicine, in Continuing Medical Education in the health area, for training in hospital wards and in Hospice in the field of Palliative Care<sup>13,14</sup>.

From 2015/2016 academic year the “C” curriculum in Medicine of Sapienza University of Rome has embedded the art practice into official courses to deepen students’ skill of observation, collaboration, communication and flexible thinking. More in particular curriculum activities were distributed across 3 under graduated years and included:

- 3rd year - Observation of visual art with the VTS method and laboratory practice at the Museum - 9 meetings in the course of Clinical Methodology (Introduction to clinical medicine)
- 4th year - Application of VTS, Iconodiagnostics and other visual practices in the context of during the first and second semester, linked to clinical courses
- 5th year - VTS practice and clinical Iconodiagnostics in electives in the first and second semester and application of VTS method to the observation of patients in clinical settings.

A typical VTS session consisted of a small group meeting of 6 or 7 students in which an artwork is observed, and the following questions are asked, “What is going on in

this picture?”, “What visual elements support what you said?” and “What else can you see?”.

The group is led by a facilitator, whose role includes asking questions, giving value to each student’s contribution to the discussion, summarizing once in a while, and encouraging possible different interpretations. The supervisor has proven expertise in the application of the VTS method, as well as being an expert in art or medical education. During a VTS session, any discussion about the artistic or historical value of the artwork is discouraged. With the VTS program also introduced other learning methods addressed to medical students such as Iconodiagnosis, hearing active practice, and drawing. It is important to have an adequate number of sessions to achieve measurable results.

These activities carried out in several meetings allow the improvement of some skills such as Problem Solving, Critical Thinking, Collaborative Work, Respect for the Thought of the Other, Greater self-confidence, Communication, Tolerance of ambiguity, i.e. the life skills that is necessary learning to relate to others and to deal with the problems, pressures and stresses of daily life<sup>15</sup>.

The VTS process helps to achieve clinical practice by observing the patient during the medical history, describing the data emerging from the history and physical examination, interpreting the results and formulating hypotheses and proving one’s theory with further observations or diagnostic tests.

The experimentation has stimulated the creation of an Evaluation Rubric which Vtskill rubric has been validated and is now used in the various sectors of medical education to measure the impact of the methods used on the development of the competences of the participants<sup>16</sup>.

Other experiences have been carried out for nursing courses at the University of Sapienza and for an educational and elective course integrating Art and Narrative Medicine at the University of L’Aquila.

The same format in 4/5 meetings is also applied for postgraduates or healthcare professionals within the Continuing Medical Education.

The results of the Evaluation of these practices are positive and suggest stimulating exercise to improve the skills and competences useful for the profession also in the creation of a comfort zone useful for limiting stress.

The evaluation involves the administration of satisfaction questionnaires at the end of the course for a qualitative Pre and post-test survey on artistic and clinical images using the VTSkill Rubric to measure the impact on improving skills.

For medical students, nursing students and postgraduates or professionals, some answers are reported that indicate how useful activities of this type can be:

When asked “what I learned”:

<b>Medical students</b>
Group work and active listening to details that I might not have observed. The effectiveness of following a method to change one's vision on the doctor-patient relationship
It was also useful to be able to question oneself, listen to the opinions of others and be open to discussion
I learned to observe carefully and critically, to formulate hypotheses by consulting with others and to integrate different ideas and knowledge
<b>Nursing students</b>
The development of interpretative skills, that is, knowing how to interpret; The development of the ability to observe and not just to look, paying attention to details
Knowing how to relate art with medicine, care and nursing; Knowing how to communicate through critical thinking, confront and know the hypotheses of each of us regarding the same object or the same image
Learn that all hypotheses are valid as long as they are supported by the thought and art of thinking of each person; Knowing how to listen actively
Observe, evaluate, reflect
Find many similarities with the ER Triage process
<b>Medical Doctors of Specific Training in Family Medicine</b>
The importance of empathy in the diagnostic / therapeutic process

The result was interesting to note the impact of the activities through the VTSkill Rubric. The evaluation highlighted how the students who have carried out these activities for all 3 years have improved and maintained their skills while those who attended only the third year then lost them in the following years<sup>17</sup>. It is not possible to indicate the reasons but it can easily think of the stress that can be experienced by students and the few possibilities of carrying out group activities. From other studies cited it is possible to read that art helps to limit stress and improves some skills<sup>18,19</sup>.

It was interesting to read the evaluation about this training by health professionals of Hospital or Hospice.

<b>Hospital</b>
I have learned that the empathy is very important for our role
I have learned that it is necessary to observe and to listen all colleagues of the team for achieving to definitely conclusion
It is relevant to learn and to listen other opinions and point of view
<b>Hospice</b>
It was a good job on paying attention and listening to one's feelings as well as on the integration of all opinions by the working group
Fun, relaxing and very educational especially in the collaboration between volunteer/patient/ healthcare operator

## Conclusion

An analysis of the first experiences of using art as a useful tool for learning in the medical and health area confirms that art can be useful in the medical education sector to respond to the training needs of students and care professionals. The involvement of MH in training and updating can improve soft skills, communication, inter-professional collaboration and empathy. The positive impact on the well-being of students and operators is also important. Evidence of the efficacy of MH in medical education is still few but international references exist to support the belief that in the curricula of medical and related professions, as well as in continuing vocational training, activities related to the visual arts they can foster a holistic approach to the care and well-being of healthcare personnel<sup>20</sup>.

Certainly, there is still a lot to do in this sector but it seems that sensitivity to these issues with the experience of the Pandemic has increased. In fact, there are many requests coming from the healthcare world in search of experiences related to Medical Humanities.

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