

Mindful practice and narrative medicine to educate professionalism undergraduate doctor

Mindful practice y medicina narrativa para educar profesionalismo médico en pregrado

Pamela Jofré ^{1,2*}, Pía Flores ^{1,3} Rebecca Oyanedel ¹, Rodrigo Valenzuela ^{1,4,5} Juan Pablo Gigoux ^{1,6,7}
and Rodrigo Vergara ^{1,2,8*}

¹ Narrative Medicine Laboratory, University of Valparaíso; pamela.jofre@uv.cl, ORCID ID: 000-0002-0787-1867

² Department of Pediatrics, University of Valparaíso.

³ School of Kinesiology, University of Valparaíso; ORCID ID: 0009-0009-6310-4724

⁴ Chair of Radiology, School of Medicine, University of Valparaíso; ORCID ID: .

⁵ Radiology Service, Dr. Carlos Van Buren Hospital, Valparaíso; ORCID ID: 00900141312663

⁶ Chair of Neurology, School of Medicine, University of Valparaíso; ORCID ID: 0009-0000-4808-9962

⁷ Neurology Service, Dr. Gustavo Fricke Hospital, Viña del Mar.

⁸ Pediatric Service, Dr. Carlos Van Buren Hospital, Viña del Mar, ORCID ID: 00900888605050

* Correspondence: pamela.jofre@uv.cl

Received: 2/19/24; Accepted: 3/22/24; Posted: 3/28/24

Summary: Medical professionalism and clinical bioethics are sought-after competencies in the medical degree at Valparaíso University and teaching them is challenging. Narrative medicine as a pedagogical tool addresses issues associated with these, generating significant learning, while mindful practice refers to the systematic use of contemplative methodologies. With the aim of showing an innovative educational experience in medical professionalism that contemplates mindful practice or full attention in clinical and narrative medicine, during 2022 a practical-reflective workshop on professionalism was implemented, in the fifth year in the subjects of Adult Clinics, Pediatrics and Women's Health. Sessions included mindfulness practices and exposure to art (film, poetic reflection, literature, comics, museum immersion), as well as reflective writing. The course was divided into three sections, each participated in 6 sessions of 3 hours. The topic was prioritized by previous surveys of teachers and students. Each session included a guideline to evaluate the students' experience and perception. Participants completed a reflective rehearsal after the sixth session. 98 students participated and the analysis of reflective texts, stories and poems submitted voluntarily plus the feedback survey, indicated high acceptance of the activity, positive assessment of mindfulness experiences applicable to the clinic, learning environment and perception of well-being. Educating professionalism by generating spaces for reflection through a narrative medicine workshop and mindfulness practices is feasible and positively valued by medical students.

Keywords: professionalism; narrative medicine; full attention.

Resumen: El profesionalismo médico y la bioética clínica son competencias buscadas en la carrera de medicina de la Universidad de Valparaíso y enseñarlas es desafiante. La medicina narrativa como herramienta pedagógica aborda temas asociados a estas, generando aprendizajes significativos, mientras que mindful practice se refiere al uso sistemático de metodologías contemplativas. Con el objetivo de mostrar una experiencia educativa innovadora en profesionalismo médico que contempla mindful practice o atención plena en clínica y medicina narrativa, durante el año 2022 se implementó un taller práctico-reflexivo de profesionalismo, en quinto año en las asignaturas de Clínicas de Adulto, Pediatría y Salud de la Mujer. Las sesiones incluyeron prácticas de atención plena y exposición al arte (cine, reflexión poética, literatura, cómics, inmersión en museo), además de escritura reflexiva. El curso fue dividido en tres secciones, cada una participó en 6 sesiones de 3 horas. La temática fue priorizada por encuestas previas a profesores y estudiantes. Cada sesión incluyó una pauta para evaluar la experiencia y percepción de los estudiantes. Los participantes realizaron un ensayo reflexivo después de la sexta sesión. Participaron 98 estudiantes y el análisis de

textos reflexivos, relatos y poemas entregados voluntariamente más la encuesta de retroalimentación, señalaron alta aceptación de la actividad, valoración positiva de experiencias de atención plena aplicable a la clínica, ambiente de aprendizaje y percepción de bienestar. Educar profesionalismo generando espacios de reflexión mediante un taller de medicina narrativa y prácticas de atención plena es factible y positivamente valorado por los estudiantes de medicina.

Palabras clave: profesionalismo; medicina narrativa; atención plena.

1. Introduction:

Professionalism has been difficult to define, however, there is consensus that it is based on the social contract, is based on virtue ethics and implies recognizing that a culture of practice of excellence in knowledge, in this case medical, must be complemented with values of honesty, truthfulness, humility and altruism, among others (1). In this regard, the need for constant personal improvement has been emphasized and it has been made clear that this must be an essential clinical competence of health professionals, within the framework of a search for excellence (2). Including and teaching this competence in the curriculum is not easy and when it is assumed in the first years, it is abstract and without links to clinical environments, which prevents real permeation in students. For this reason, it has been recommended to integrate it into curricula and clinical practices (3). It is proposed that structured and guided reflection, with protected spaces, is preferable to other methods, given that it is a metacognition that creates greater understanding of the experiences related to clinical rotations and that can influence future actions. In short, this allows us to question, analyze and rethink experiences and learn from all of this, that is, reflective learning for reflective practice (4).

For these reasons, we believe that narrative medicine (MN), together with mindfulness and reflective writing, allow us to stop and think about those milestones of professionalism that we seek to address, encouraging the student to reflect on their behaviors, what they observe in their clinical environments and in the relational component of it. Working with full attention prior to the MN exercises facilitates the suspension of judgment, so that we enter the chosen narrative materials as if they were something completely unknown, with curiosity and a beginner's mind, trying to discover what is there and share it with others. Others, understanding that the subjectivity of language and its perception is part of the richness of the method (5-6). Subsequently, a second moment considers reflective writing or drawings. When mindfulness practices become a habit and are oriented toward the clinic (mindful practice), they collaborate in raising awareness of what happens to us when we face patients and witness their suffering, facilitating communication, self-awareness and the practice of conscious medicine (7-8). Due to the above, we consider that the educational tools described were an attractive possibility to educate medical professionalism and clinical bioethics issues, even more so when, at the University of Valparaíso, these are declared competencies that must be inserted in the curricular framework. We decided to include them in clinical branches, trying to ensure that the reflections are not given in an abstract way, but rather integrated into practices. For this reason, in 2022, the workshops that we will describe below were incorporated into different theoretical-practical units of the fifth year of medicine at the University of Valparaíso.

The objective of this project is to describe the application of an innovative proposal for the education of medical professionalism and its evaluation, through the development of a practical-reflective workshop based on narrative medicine and mindful practice.

2. Methods

During the year 2022, we searched give transversality to the competencies of professionalism and clinical bioethics, through a strategy based on narrative medicine and mindful practice. Previously, a pilot plan was applied in the fifth-year pediatrics course during the years 2020 and 2021, which after being positively evaluated, it was decided to expand and officially integrate it into the curriculum. The curricular modification was approved by the School Council in 2021 and therefore, in 2022, the first transversal course in medical professionalism and clinical bioethics was implemented, which in its



Figure 2. Foot-based body mindfulness practice, with the aim of practicing it in complex moments.

The narrative medicine activities varied in the sessions and included initial reflections after careful and detailed reading of literary fragments, comics, poetry, and short stories by former students. The didactics included the use of comics and graphic medicine, cinema, documentaries and days of poetic reflection. In addition, visual art was used in the municipal museum of Viña del Mar, Palacio Vergara. At the beginning, the students received a notebook to record their experiences, as a writing diary between the sessions, and also the writing exercises and reflective drawings proposed in the workshops. In all groups the same topics were addressed, however, the teaching had to be adapted to the context of the field (pediatrics, adult or women's medicine) and that is why the sessions have differences, although they respect the corresponding thematic axis. For a better understanding of the experiences carried out, we summarize the sessions in table 1.

At the end of the meetings, the students completed a brief survey to find out their perception of the workshop, as well as their acceptance of the proposed methodologies. This consisted of 2 parts, a quantitative one, in which they rated their general evaluation of the session with a score from 0 to 3, with 0 being not valuable or not useful and 3 being very valuable or very useful, and then two open questions about new contributions perceived in the session. session and the most valuable experience they had in them (peak experience).

The teaching team was made up of an interdisciplinary group trained and certified in narrative medicine, bioethics, mindfulness, graphic medicine, illustration, art and aesthetics, film and documentary and was made up of 4 clinical teaching doctors who, in addition to their specialties, have the competencies already described, a kinesiologist expert in therapeutic yoga and relational mindfulness, a graphic designer who is also an illustrator. In some sessions, the presence of an expert in literature and an artist, trained in Art in Health, was added to them. The course was evaluated through a reflective essay that all students submitted.

Table 1 . Summary of the sessions held.

Didactics	Group A	B Group	Group C
Session 1 Communication	Project presentation Recognition exercise Reading student stories in small groups Individual reflective writing and small group reading. Mindfulness exercises Foundation and experiences of mindful practice. Communication exercise: "90 seconds" (fig.1) Joint reflections. Reading fragments of the comic "A possibility" by Durán and Guiner, discussion in small groups and in plenary. Drawing exercises.	Project presentation Recognition exercise Reading texts from students from previous years. Small group reflections Mindfulness and communication exercises. Practice of the "90 seconds" exercise (fig.1). Reading of fragments of the graphic novel "Que no me muero" by María Hernández, discussion in small groups and plenary Drawing exercise based on a student story: "The coffee stain"	Project presentation. Recognition exercise Reading student texts in small groups. reflective writing Mindfulness exercise based on "90 seconds" (fig-1) Reading fragments of the comic: "A Bad Doctor" by Ian Williams. Discussion in small groups, and in plenary.
Session 2 Autonomy	Landing: breathing exercises. Documentary viewing: "The Children" by Maitte Alberdi. Discussion in small groups, in plenary. Reflective writing exercises Art viewing, reflections in small groups and in plenary. Reflective drawing exercises. Reflections in plenary.	Landing: breathing and corporality exercises. Mindful practice tips. Watched the "empathy" video (available on YouTube), joint reflections. Reflective writing exercise. Reading and viewing vignettes taken from the books: "A Bad Doctor" by Ian Williams, "Medical Consciousness" by Mónica Lalanda and "Que no me muero" by María Hernandez Martí. Reflective writing related to autonomy and hospital practices.	Landing with mindfulness practices based on breathing and corporality. Mindful practice tips Drawing exercises: "the coffee stain" Reading and viewing vignettes taken from the books: "A Bad Doctor" by Ian Williams, "Medical Consciousness" by Mónica Lalanda and "Que no me muero" by María Hernandez Martí. Reflective writing related to autonomy and hospital practices. Reading texts in small and plenary groups.
Session 3 Social determinants	Landing based on corporality Introduction poetry, singing and poetic value by Victor Jara Writing exercise « Let's open all the cages» (based on V. Jara poetics) Imagined reading of "Angelita Huenumán". Careful reading Decimas by Violeta Parra Documentary viewing: "The seven sewers" (Chus Gutierrez). Reflections in small groups and plenary. Breathing exercises. Art viewing: "The sick child" by Pedro Lira. Reflective writing: related to the topic and practice in pediatrics. Voluntary reading of texts and final comments.	Landing based on corporality exercises Cinema viewing. "I Daniel Blake" (Ken Loach, 2016) Reflections in plenary. Individual reflective writing. Voluntary reading of texts Final thoughts.	Landing based on corporality and breathing exercises. Cinema viewing. "Tomy's Notebook" (Carlos Sorin, 2020) Reflections in plenary. Individual reflective writing. Voluntary reading of texts Attentive reading of the story "Anagrama" by Mateo Niro (prematore stories) in small groups. Reflections in groups and plenary. Reflective writing exercise Voluntary reading and group reflection.
Session 4 End of life	Initial mindfulness. Museum immersion: Viewing selected works of art and reflective work in small groups with tutors, using VTS (visual thinking strategies) Poetry and medicine session Day of poetic reflection based on previously delivered collection of poems (selection from the UV Narrative Medicine Laboratory for work with themes of the end of life, death and dying) Writing exercise: exquisite corpse in small groups. Readings and reflections from texts constructed in groups	Initial mindfulness. Museum immersion: Viewing selected works of art and reflective work in small groups with tutors, using VTS (visual thinking strategies) Poetry and medicine session Day of poetic reflection previously delivered poems (selection from the UV Narrative Medicine Laboratory for work with themes of the end of life, death and dying). Writing exercise: exquisite corpse in small groups. Readings and reflections from texts constructed in groups	Initial mindfulness. Museum immersion: Viewing selected works of art and reflective work in small groups with tutors, using VTS (visual thinking strategies) Poetry and medicine session. Day of poetic reflection based on a collection of poems previously delivered (selection from the Narrative Medicine Laboratory for work with themes of the end of life, death and dying). Writing exercise: exquisite corpse in small groups. Readings and reflections from texts constructed in groups
Session 5 Self-care	Landing and mindfulness "I can" exercise and work with PUP. Reading poem "green ear" (Gianni Rodari), first-person exploration. Self-care stations tour Joint reflections Gratitude: reading texts and writing.	Landing and mindfulness "I can" exercise and work with PUP. Reading poem "green ear" (Gianni Rodari), first-person exploration. Tour of self-care stations. Joint reflections. Gratitude: reading texts and writing.	Landing and mindfulness "I can" exercise and work with PUP. Reading poem "greenear" (Gianni Rodari), first-person exploration. Tour of self-care stations. Joint reflections. Gratitude: reading texts and writing.
Session 6 social justice	Mindful practice: exercise "Where are my feet?" (fig. 2). Writing from corporality Justice and medicine conversation Collective mural construction Oral reflections and reflective writing	Mindful practice: exercise Where are my feet? (fig.2). Writing from corporality. Justice and medicine conversation Collective mural construction Oral reflections and reflective writing	Mindful practice: exercise Where are my feet? (fig. 2). Writing from corporality. Justice and medicine conversation Collective mural construction Oral reflections and reflective writing

3. Results

Students completed the evaluations in a variable manner, generally decreasing the number of surveys answered as the sessions progressed: 88 (89.7%) in the first session, 59 (66%) in the second, 50 (56.2%) in the third, 34 (38.2%) in the fourth, 55 (56%) in the fifth and 25 (25.5%) in the last one.

The results of the quantitative evaluation were always positive, highlighting option 3 (very valuable) as predominant, which in percentages for each session is distributed as follows: 73.9%, 69.5%, 64%, 48.5%, 75.5% and 68% respectively. In general, all sessions except session 4 had an evaluation of very valuable or valuable over 95%.

In the question about the new contributions perceived from the sessions, the following themes emerge:

- the reflective dimension necessary for healthcare practice.
- the human component of the doctor-patient relationship.
- the importance of writing for reflection.
- the need for reflection on kindness and compassion in dealing with others.
- the need for retrospective reflection, to pause to think about oneself, colleagues and practices.
- the importance of communication between students, with patients and in all types of settings.
- the valuable contribution of mindfulness to clinical practice.
- the need to respect patients' ideas and decisions, even if they are different from those proposed by a team.
- the value of poetry and art to reflect.
- the need to constantly visualize the social inequalities that are always present, but are omitted in the daily life of work.
- assess human vulnerability.
- the importance of talking about death in health professions.
- the development of curiosity through art
- art as a tool of resilience.
- changing perspectives makes it easier to understand injustices.
- value pauses and reflection in medical education as a source of self-care.
- the importance of childhood for a person's life

Regarding the question about the peak experience perceived in the sessions, the most frequently mentioned topics were:

- remember and bring with exercises, childhood to the present
- remember with songs vulnerability and childhood, the limits of life and death.
- make a mural, and express the ideas there.
- the proposed games and share as a group through it.
- writing linked to health.
- the activity of care, because it allowed us to laugh, to connect only with that moment, without thinking about what had to be done next.
- being able to do an activity that does not require studying.
- draw without thinking that you are procrastinating.
- the dynamics of the room with mirrors and without furniture.
- admire the beauty of works of art, meditate in front of them.
- the realization of the exquisite corpse as a moment of curiosity and joint reflection.
- poetry reflection with a specific objective.
- the forum, after listening to songs and reflections.
- write tenths.
- watching a documentary that allows you to see other lives and perspectives
- mindfulness practices applied to health
- the possibility of giving opinions in groups and listening to different perspectives on a topic
- draw and use visual material to reflect

Regarding the summit experience, we highlight the positive assessment of being able to listen to oneself and reflect with the following story: *“it was very enriching to have the opportunity to share with my classmates outside of what are classic academic activities, and listen to stories, opinions on a topic that concerns us all and reaches us in a similar and at the same time so different way. “I am very grateful for these moments of pause and reflection.”* Many of them refer explicitly to what is experienced with writing, for example: *“ I think the most significant thing was writing an experience, which I didn’t know I had so present until I wrote it.”* Other phrases illustrate moments linked to exposure to graphics or drawing: *“ when reading the comics and observing these situations one realizes that it is very common to see them every day, and that people in the health area do not take enough weight into it.” to their actions and how it can affect others,” “I liked drawing, I express myself better that way than by writing.”*

All students completed the delivery of the final reflective text requested as a final passing requirement.

4. Discussion

According to the results shown in this educational innovation experience, the most relevant findings, in our opinion, are related to the possibility of effectively incorporating new tools in medical education, coming from the use of art and humanities, structured in narrative medicine. and enhanced by the use of mindful practice. This experience contributed to developing and guiding reflections on specific topics linked to medical professionalism and clinical bioethics that, when introduced in more advanced stages of medical studies, allowed students to reflect by connecting it with the experiences of their clinical fields. Furthermore, we highlight the acceptance of this proposal by the students, although it required a willingness to be open, mobilization to new spaces and working in groups with colleagues with whom they had rarely contacted before. An unevaluated factor that could have influenced the results and high acceptance of the proposal is related to the fact that this is a generation eager to carry out practical and relational activities, as a result of the declines in these aspects, in the previous two years of the COVID-19 pandemic. 19. Furthermore, it must be considered that the proposal responds to joint planning that respects a work methodology, but has prioritized the issues of professionalism and bioethics that matter to this particular educational community (teachers and students), in a participatory and blind way. The above could make this specific initiative not applicable to other contexts.

Narrative medicine and reflective writing:

This initiative stands out for the versatility of narrative medicine to educate in various areas of medical professionalism. The methodology initially developed by Dr. R. Charon of Columbia University, stimulates the development of reflections from the slow and detailed reading of texts (literary fragments or poetry), known as Close Reading (10-11). The basis involved in the method uses narrative and its various formats as a primary source of conjecture. This innovation project has used almost the entire described range of possibilities, given that it is part of the systematic work of an academic structure called the narrative medicine laboratory, which has existed since 2018 at the University of Valparaíso. In it, an interdisciplinary professional group developed educational didactics adapting materials from cinema, classic literature (fragments of prose and poetry) and in comic format, graphic novels, etc. We highlight the advantages of using visual art, under the educational modality focused on museums, using techniques described for this (12-13). Different reasons support this practice, among which the improvement of learning environments and the perception of well-being and social cohesion stand out by using public structures to benefit medical education and professional future (14-15). Finally, we highlight the value of writing as a source of self-knowledge and what happens in educational environments, since the results of this project have been eloquent in illustrating what many authors had described prior to the conceptualization of narrative medicine. e.g. *“I write because I don’t know what I think until I read what I say,”* Flannery O’Connor along with others (16).

Contemplation in teaching and health care :

The need to suspend judgment to focus on the experiences of the present shown in this project has its roots in 1999, when Ronald Epstein raised the need to promote, through contemplative practices, efforts to stimulate reflection, self-awareness. and well-being in undergraduate and graduate medical education (7). The practice of mindfulness in these contexts implies being focused on the present, which makes it easier to attend to complex situations, identify what is happening to us, integrate it without prejudice, including what happens in the healthcare environment, to act with clarity, compassion, resolution capacity, practical wisdom and interpersonal effectiveness; which will contribute to the desired virtuosity in the development of medical professionalism and clinical bioethics. To access these well-documented benefits, it is necessary to include a method that allows educating these aspects and the mindful practice associated with narrative medicine seems to do so.

Limitations.

From this project particularly focused on medical professionalism and clinical bioethics, it will be necessary to study the main limitation that we visualize and that is related to the persistence of the skills addressed. Studies will be required to determine whether students maintain their enthusiasm and perceived influence in the long term. In some sessions, we found a decrease in the response rate to the questionnaires delivered, which was partly associated with evaluation activities in the subjects that the students were studying at that time and the place where the session was held, since the main shrinkage was presented in the session held outdoors, in the courtyard of the city museum. However, it is possible that in subsequent sessions interest in responding to the forms and perhaps in the activity itself may have been lost .

5. Conclusions

- The practice of medicine depends on a deep understanding between the clinician and the patients and human understanding begins with understanding oneself (9).
- For more than 30 years there has been an awareness of practicing genuine and self-compassionate professionalism and insisting on education in clinical bioethics. The contemplative and reflective methodologies applied to students at higher levels (fifth year of medicine) seem to contribute to these objectives.
- Our responsibility as medical educators in the face of epistemic uncertainty requires us to be aware of the ambiguity that we face in education and in health contexts and forces us to rethink established dogmas and be open with humility and curiosity to new educational proposals such as those that have been addressed in this innovative initiative.

Financing: The work did not have a source of financing.

Acknowledgments: The authors thank ASOFAMECH (association of medical schools of Chile) for having awarded the teaching innovation award to this project in 2021, which allowed the purchase of materials to develop it and the printing of the book that brings together stories. of professionalism based on narrative medicine, which was built with selected texts from students participating in this project. Also to Ernesto Pfeiffer and Mariana Occhiuzzi for their collaboration in some sessions and finally to the generous participation of the students of the fifth year 2022 generation.

Declaration of conflict of interest: The authors declare that they have no conflict of interest.

Author contributions : Pamela Jofré: project creation, application, data collection, data analysis and writing of the manuscript. Pía Flores: project creation, application, data collection, data analysis. Rebecca Oyanedel: project creation, graphic material preparation, application. Juan Pablo Gigoux: creation of the project, application, data analysis, preparation of the manuscript. Rodrigo Valenzuela: project creation, application, style correction. Rodrigo Vergara: creation of the project, application, preparation of the manuscript.

References

1. Puschel K, Repetto P, Bernales M, Barros J, Perez I, Snell L. "In our own words": Defining medical professionalism from a Latin American perspective. *Educ Health (Abingdon)*. 2017;30(1):11-18. [doi:10.4103/efh.EfH_4_16](https://doi.org/10.4103/efh.EfH_4_16)

2. Song X, Jiang N, Li H, Ding N, Wen D. Medical professionalism research characteristics and hotspots: a 10-year bibliometric analysis of publications from 2010 to 2019. *Scientometrics*. 2021;126(9):8009-8027. [doi:10.1007/s11192-021-03993-0](https://doi.org/10.1007/s11192-021-03993-0)
3. O'Sullivan H, van Mook W, Fewtrell R, Wass V. Integrating professionalism into the curriculum. *MedTeach*. 2012;34(2):155-157. [doi:10.3109/0142159X.2011.595600](https://doi.org/10.3109/0142159X.2011.595600)
4. Al-Eraky MM. Twelve Tips for teaching medical professionalism at all levels of medical education. *MedTeach*. 2015;37(11):1018-1025. [doi:10.3109/0142159X.2015.1020288](https://doi.org/10.3109/0142159X.2015.1020288)
5. Engel J, Zarconi J, Pethtel L, Missimi L. Skills for the Practice of Narrative. In *Narrative in health care*, 1st ed.; Publisher: Radcliffe Publishing Ltd, United Kingdom, 2008, 167-217.
6. Charon R. In: *The principles and practice of narrative medicine*, 1st ed.; Publisher: Oxford University Press, New York, United States of America, 2017, Part 4, chapter 7, 157-179.
7. Epstein RM. Mindful practice. *JAMA*. 1999;282(9):833-839. [doi:10.1001/jama.282.9.833](https://doi.org/10.1001/jama.282.9.833)
8. Epstein, R.M. (2003). Mindful practice in action (I): Technical competence, evidence-based medicine, and relationship-centered care. *Families, Systems, & Health*, 21 (1), 1-9. <https://doi.org/10.1037/h0089494>
9. Epstein R. *Attending. Medicine, Mindfulness, and Humanity*. New York: Scribner, 2017 (captions on page 83)
10. Charon R. The patient-physician relationship. *Narrative medicine: a model for empathy, reflection, profession, and trust*. *JAMA*. 2001;286(15):1897-1902. [doi:10.1001/jama.286.15.1897](https://doi.org/10.1001/jama.286.15.1897)
11. Charon R, Hermann N, Devlin MJ. Close Reading and Creative Writing in Clinical Education: Teaching Attention, Representation, and Affiliation. *Acad Med*. 2016;91(3):345-350. [doi:10.1097/ACM.0000000000000827](https://doi.org/10.1097/ACM.0000000000000827)
12. Mukunda N, Moghbeli N, Rizzo A, Niepold S, Bassett B, DeLisser HM. Visual art instruction in medical education: a narrative review. *Med Educ Online*. 2019;24(1):1558657. [doi:10.1080/10872981.2018.1558657](https://doi.org/10.1080/10872981.2018.1558657)
13. Cerqueira AR, Alves AS, Monteiro-Soares M, Hailey D, Loureiro D, Baptista S. Visual Thinking Strategies in medical education: a systematic review. *BMC Med Educ*. 2023;23(1):536. Published 2023 Jul 27. [doi:10.1186/s12909-023-04470-3](https://doi.org/10.1186/s12909-023-04470-3)
14. Reilly JM, Ring J, Duke L. Visual thinking strategies: a new role for art in medical education. *Fam Med*. 2005;37(4):250-252. <https://www.stfm.org/familymedicine/vol37issue4/Reilly250>
15. Cerceo E, Vasan N. Creating Alignment: How the Humanities Can Help Heal Physicians and Patients. *J Med Educ Curric Dev*. 2023;10:23821205231203487. Published 2023 Sep 27. [doi:10.1177/23821205231203487](https://doi.org/10.1177/23821205231203487)
16. Quote Origin: I Do Not Know What I Think Until I Read What I'm Writing. Available at <https://quoteinvestigator.medium.com/how-do-i-know-what-i-think-until-i-read-what-i-write-54c95903ab91>

