

Using Opera to Teach the History of Medicine to Medical Students and Their Assessment of This Novel Approach

Alan Schamroth^{1*}, Neil Spencer²

¹Department of Primary Care and Population Health, University College London Medical School, London, UK

²Hertfordshire Business School, University of Hertfordshire, Hatfield, UK

Email: *alanschamroth@yahoo.co.uk, n.h.spencer@herts.ac.uk

How to cite this paper: Schamroth, A., & Spencer, N. (2025). Using Opera to Teach the History of Medicine to Medical Students and Their Assessment of This Novel Approach. *Creative Education*, 16, 135-143. <https://doi.org/10.4236/ce.2025.162008>

Received: August 26, 2024

Accepted: February 15, 2025

Published: February 18, 2025

Copyright © 2025 by author(s) and Scientific Research Publishing Inc. This work is licensed under the Creative Commons Attribution International License (CC BY 4.0).

<http://creativecommons.org/licenses/by/4.0/>



Open Access

Abstract

Teaching medical students about the history of their future profession, is generally regarded as an important component of a comprehensive medical education, yet it is seldom taught. A knowledge and understanding of the historical development of medicine, surgery and therapeutics allows the students to contextualise and place the current state of medical science within a historical continuum and it also allows glimpses into the future. The author takes the importance of the teaching of the history of medicine as a given. The question is “how” to deliver this history of medicine teaching. In this unusual, ethically approved educational programme, 24 non-selected first clinical year medical students were taught aspects of history of medicine through the medium of opera. The student’s feedback on this programme was generally very positive and they reported that the opera helped increase their empathy, listening skills and touched many of them emotionally.

Keywords

Teaching the History of Medicine through Opera, Opera in Medical Student Education, Medical Student Reflections on Opera

1. Introduction

Medical students at University College London Medical School (UCLMS), like all medical students in the UK, are required to spend time in the community during their (mostly) hospital-based training. The students at UCLMS spend 9 days in their first clinical year attached to a general practitioner (family doctor) in a programme called “Medicine in the Community” (MIC). During the academic year ending 2018, twenty-four non-selected medical students were attached to the

author's general practice clinic in North London for their MIC community attachments. They experienced traditional medical teaching (consulted with patients and received tutorials on primary care related topics), but in addition were exposed to 30 minutes of opera related history of medicine sessions. The students watched highly selected DVD productions of operas featuring doctors from the 1790's to 1925 lasting 20 minutes and this was followed by 10 minutes of interactive discussion on the history of medicine covering topics illustrated by the operas. During the brief opera sessions, the students completed short questionnaires focusing on specific historical and clinical details in the productions (for example, how effective was the surgeon in Verdi's "La Forza del Destino" in saving the life of Don Alvaro and what medical role did the doctor play in attending to Violetta as she was dying from TB in Verdi's "La Traviata"?).

While the importance of teaching the history of medicine to medical students has elsewhere been described (Cordell, 1904; Treadwell, 2018), the methodology of how best to deliver this teaching has not been reported (McGee, 2018). The author chose opera as a vehicle for this teaching for four reasons. Firstly, educationalists recognise that educational recall is improved by multimedia presentation, group discussion, demonstration, "practice doing" and teaching others (Loveless, 2025). The author believed that watching opera to illustrate a historical lesion, followed by group discussion, led by an enthusiastic presenter was likely to be so unusual and different, that it was probable that the students would remember the learning experience and hopefully more of the content relating to the history of medicine.

Secondly, the author perceived, as others have done, that opera is uniquely placed to illustrate the development of the social status of doctors in society and public attitudes towards the profession as well as reflecting the development of medicine over the centuries (Willich, 2006; Soriano, 2018).

Thirdly, opera is a multi-sensory medium (drama, music, acting, singing) within which to teach the history of medicine and importantly provides an "emotional" as well as a cognitive context in which the students learn. The author believed this would enrich, deepen and enhance the students learning experience. Furthermore, the author argues that medical students have a very science-oriented education from high school through to medical school and exposing them to the rich art form of opera, would have a broader educational impact on their sensitivity, their empathy towards the suffering of their patients and to their overall development as doctors (Schamroth et al., 2020).

Finally, the author hoped to present a pastoral and supportive model for the students. Even at this early stage in their careers, the students are well aware of the tension and contradiction between a profession concerned about patient's well-being and a hierarchical, often intolerant and inflexible health system that doesn't reciprocate the same concern towards the student's well-being. In taking the students on this opera journey, where the author as role model was sympathetic to and supportive of the student's emotions and feelings, it was hoped this would

illustrate a kinder and more empathic way of teaching and practicing medicine.

While the author provides a rationale for using opera to teach the history of medicine, this paper does not explore alternative methods for achieving similar learning outcomes.

2. Method

The 24 first year clinical students attending for their 9 days in primary care, were taught in 3 groups of 8 students. During the day, they experienced the same conventional undergraduate training experienced by their year group peers, seeing patients, observing clinicians and having tutorials. The lunch break was shortened to accommodate the 30mins of opera-based history of medicine teaching. Each session began with a short synopsis and explanation of the opera to allow the 20 min selected extract to be viewed in context. The students were given worksheets to prompt attention to specific clinical details in the selected productions.

Session 1: The programme began with the students watching Mozart's 1790 opera, "Cosi Fan Tutti". The 20minute scene shown to the students occurs towards the end of Act 1. Here the maid Despina is disguised as a doctor and restores to health the two officers (who are feigning sickness) with the help of a large magnet (the "Mesmeric" stone). The students observe "the doctor" (Despina in disguise) sprouting bogus Latin expressions and asking whether the poison consumed was "hot or cold". This provided an opportunity to discuss the historical origins of the Greek notions of disease on which western medicine was based before the 18th century. The students heard about the 4 humours (including heat and cold) as the basis of a completely false theoretical framework of illness and the harmful treatments that flowed from this paradigm (including blood-letting, leeching and purging). They also learned of the distinction between wealthy university educated physicians who studied Latin and Greek and who administered to the rich, compared to the lay healers (bonesetters, lay midwives, tooth pullers, herbalists) who treated the poor. The students agreed that Mozart's depiction of the doctor (admittedly a disguised maid), was that of a boastful, self-promoting, magnet wielding charlatan, hiding behind a classical education. The students learned that there were very few beneficial therapeutic options available at this time leaving the field wide open to bizarre theories like Dr Mesmer's magnetic treatment (Porter, 2001).

Session 2: In Rossini's 1816 opera "The Barber of Seville", the students watched Act 1 and observed Dr Bartolo being ridiculed and teased by his barber, Figaro, amongst others. The students were asked how they felt Rossini portrayed Dr Bartolo as a commentary on the status of the medical profession at the beginning of the 19th century. They reflected that the doctor was self-centred, upper-class and arrogant. The students learned that from the 13th century, the university educated upper class doctors (who studied classics and theory) were forbidden from shedding blood or often even touching the patient (which was beneath their dignity), leaving the barber-surgeons (working class and guild apprenticed) to play an

important health role doubling as surgeons able to drain abscess's, pull teeth and set bones. The students heard how the profession of "barber surgeon" (already on the wane at the time of this opera) laid the foundation of the modern surgeon (Porter, 2001).

Session 3: In this session the students watched part of Act 1 of Donizetti's 1832 opera "L'elisir d'amore". Here the travelling quack "doctor" Dulcamara, peddles snake oil potions and false cures for all ailments, but has a good understanding of human nature. The "doctor" sells the simple peasant Nemorino, a bottle of wine under the false claim that it is an elixir of love with surprising results.

The students heard about the revolutionary changes of the understanding of health in the early 19th century with the increased attention to physical examination, linking anatomy with clinical signs, new equipment such as the stethoscope (1820), Semmelweis' germ theory (1848) and laboratory medicine (Porter, 2001). The students were reminded of the power of positive thinking and the current shift away from René Descarte's body and mind separation.

Session 4: The students watched Gaetano Donizetti's opera "Don Pasquale" (1843). The students observed that Donizetti presents the medical profession as having the respect and confidence of society, as illustrated by Don Pasquale's trusting attitude towards Dr Malatesta (who nevertheless goes on to betray this trust). The students compared this to the first 3 sessions where the doctors were portrayed as charlatans. The students were taught that while doctors by the mid 19th century were developing important skills at history taking, examination and diagnosis, they had few therapeutic options apart from their skills in managing psychosomatic illness.

Session 5: Here we watched Verdi's opera "La Traviata" (1853) Act 3, where Violetta is dying from Pulmonary Tuberculosis (TB). The introduction to this session included a reminder of the dates of effective TB treatment of Streptomycin in 1935, Rifampicin in 1950 and Isoniazid in 1960. In this selected production the students were asked to identify symptoms and signs of TB (lethargy, blood on her handkerchief and delirium). The students were also directed to the doctor-patient relationship, when Violetta says to Dr Grenvil, "you are my true and only friend". Finally, the students observe the breach of honesty (when the doctor tells her she is well on her way to recovery) and his lack of confidentiality (when he tells her maid that Violetta has only a few hours to live). After watching the scene, the students reflect on what the medical profession could offer patients in 1853-certainly not a cure, but definitely comfort and care. The students were asked how they feel Verdi portrayed the medical profession and conclude that the doctor was seen as compassionate, empathic and supportive.

Session 6: In this session the students were given an introduction to the history of General Surgery, before watching Giuseppe Verdi's opera "La Forza del Destino" set in 1869. In Act 2, "To arms" (20 mins), we meet (briefly) the surgeon just behind the frontline of the battlefield (where historically much of surgery was developed). In the carefully chosen production, the surgeon wears an apron over

civilian clothes and no gloves nor mask. The surgeon explains to Don Carlo, that he is worried about a bullet close to Don Alvaro's heart, then takes the wounded captain to surgery, before reappearing to say that Don Alvaro lives. The students reflect on what surgery could offer by the time of this opera which included highly skilled surgery on superficial and peripheral body parts under anaesthesia (ether 1846), the use of iodine disinfectant since 1820 and by this time, Semmelweis (1848) was recommending hand washing & instruments cleaned in chlorinated lime and Joseph Lister (1867) recommended surgery conducted in a carbonate mist (Porter, 2001). Finally, the students considered Verdi's portrayal of the medical profession as positive, helpful, useful & practical. Many of the previous opera's watched by the students showed the profession to be held up to ridicule, whereas now for the first time we see the doctor/surgeon as a skilled professional who could save lives.

Session 7: In J Offenbach's 1881 opera "Tales of Hoffman" Act 3, the students meet the singer Antonia who has an inherited illness (possibly the autosomal dominant condition of prolapsed mitral valve) and who is discouraged from singing because it might precipitate a fatal arrhythmia, as happened to her mother. In this gothic horror story, the students meet a new development in the history of medicine, that of the malevolent doctor. The students were asked to listen to the music with its couplets when the wicked Dr Miracle diagnoses a "fast and irregular pulse" before bullying Antonia into singing. This opera provides a vehicle for a discussion on genetics and that at the time of this opera's production, Gregor Mendel had already described dominant and recessive genetic traits (1865).

Session 8: In this session, the students watch Puccini's 1918 opera "Sister Angelica". It is a tragic story of the childhood death of Sister Angelica's son, borne out of wedlock and given up for adoption. Unable to bear her grief any further, Sister Angelica who runs the pharmacy of the convent hospital, prepares a toxic compound and commits suicide. The students were given a brief tutorial on the history of hospitals, the effective medicines available at this time, the usual course of grief reactions and the current management of suicidal ideation. Finally, they are asked to reflect on the effectiveness of Puccini's music in conveying Sister Angelica's emotion.

Session 9: In the final session at the end of the year, the 24 students were asked to anonymously complete a feedback questionnaire on how they found the opera programme as a means of teaching about the history of medicine. They were asked to rate 10 statements scored on a 7-point Likert scale from 1 (strongly disagree) to 7 (strongly agree). In addition to these 10 statements, the students were invited to free text any comments, impressions, suggestions and concerns about the use of opera as a method of teaching the history of medicine.

The 10 Statements (Q 1-10)

Q1: Observing the changing status of doctors over time through opera was interesting and relevant.

Q2: I found opera enhanced my understanding of the human dimension of

illness.

Q3: I found exploring the history of medicine through opera was important and relevant.

Q4: I found watching and discussing opera as a group helped create closer bonds with my peers.

Q5: I found opera evoked a broad range of emotions (compassion, forgiveness, love) and experiences (illness, death, suicide, poverty).

Q6: I believe doctors have an obligation to reflect on patients suffering as well as their disease.

Q7: I felt that opera explored suffering and was helpful in encouraging empathy.

Q8: The unique combination of music, singing and drama touched me emotionally.

Q9: I believe that opera offered an opportunity to reflect on the complexity of listening.

Q10: Opera as an art form grew on me over the year.

3. Results

Table 1. Means and 95% confidence intervals for each feedback question.

	Mean, 95% CI	Median, Inter-Quartile Range
Q1: Observing the changing status of doctors over time through opera was interesting and relevant	4.04 (3.44, 4.65)	4.00 [3.00, 5.00]
Q2: I found opera enhanced my understanding of the human dimension of illness	4.57 (3.97, 5.16)	4.00 [4.00, 6.00]
Q3: I found exploring the history of medicine through opera was important and relevant	4.35 (3.74, 4.95)	4.00 [3.00, 5.50]
Q4: I found watching and discussing opera as a group helped create closer bonds with my peers	4.30 (3.70, 4.91)	4.00 [3.50, 5.00]
Q5: I found opera evoked a broad range of emotions (compassion, forgiveness, love) and experiences (illness, death, suicide, poverty)	4.48 (3.93, 5.03)	4.00 [4.00, 5.00]
Q6: I believe doctors have an obligation to reflect on patients suffering as well as their disease	6.13 (5.78, 6.48)	6.00 [5.50, 7.00]
Q7: I felt that opera explored suffering and was helpful in encouraging empathy	3.83 (3.38, 4.27)	4.00 [3.00, 4.50]
Q8: The unique combination of music, singing and drama touched me emotionally	4.30 (3.73, 4.88)	4.00 [3.00, 5.00]
Q9: I believe that opera offered an opportunity to reflect on the complexity of listening	3.78 (3.25, 4.32)	4.00 [3.00, 5.00]
Q10: Opera as an art form grew on me over the year	4.48 (3.82, 5.14)	5.00 [3.50, 5.50]

When all the statements were taken as a whole.... The overall mean was 4.43 (95% CI. 4.03, 4.83) and Median 4.7 (Inter-Quartile Range 3.85, 5.05).

Means and 95% confidence intervals (CI) have been calculated for each of the feedback statements. Also shown in **Table 1** are medians (the mid-point of the

data) and the interquartile range (from 25% of the way through the data to 75% of the way through). On the 7 point Likert scale, 1 represents strongly disagree & 7 represents strongly agree with the following 10 statements.

Most of the qualitative comments were generally positive.

“I enjoyed the chance to see how medicine has evolved through the eyes of composers and librettists”; “I enjoyed the exposure to opera and thank you for this opportunity”;

“I found it a fascinating way of learning about the history of medicine”; “I thought it was really good—thank you”; “It was super enjoyable and emotional”; “I enjoyed the opera a lot, but not sure if will help me pass finals”.

Of the few negative comments, half reflected anxiety about the opportunity cost of the opera programme and missing hard clinical teaching. The students reasoned that since they weren’t going to be examined on the history of medicine, they felt it was at best a distraction, no matter what the medium. And the other half, while finding the opera inaccessible, nevertheless enjoyed the history of medicine component.

4. Discussion

In considering the students feedback, it must be borne in mind that these students were not selected and that opera took them out of their comfort zones and exposed them to an art form many of them had never before experienced. In addition to this, many students felt anxious that this history of medicine programme was taking time away from their examination directed studies and at this point in their careers, the only education of relevance was that which would be examined. Although much has been written about the benefit of studying the history of medicine, few medical schools (including UCLMS) routinely teach this subject as a mainstream course and as a consequence many students fail to see its benefit or relevance and look negatively upon the subject.

The student’s overall response to opera as a vehicle for the teaching of the history of medicine probably reflected all these concerns.

Despite these reservations, the students rated the statements reasonably highly and all above the 50% mean. Ranking their feedback, the highest was for Q6 (an obligation to reflect on patients suffering), followed by Q2 (opera enhanced my understanding of the human dimension of illness), then Q5 (opera evoked a broad range of emotions and experiences) and Q10 (opera as an art form grew on me over the year). Lower down the scoring, but well above 50% approval was Q3 (exploring the history of medicine through opera was important and relevant), then Q4 (watching and discussing opera as a group helped create closer bonds with my peers), Q8 (The unique combination of music, singing and drama touched me emotionally) and Q1 (observing the changing status of doctors over time through opera was interesting and relevant). The two lowest mean scores, but nevertheless still above 50% approval were Q7 (opera explored suffering and was helpful in

encouraging empathy) and Q9 (opera offered an opportunity to reflect on the complexity of listening).

The confidence intervals of all but three of the statements (Q1, Q7 and Q9) were above 50%, but when the confidence intervals of all 10 statements were taken collectively the overall mean was 4.43 with a confidence interval of 4.3 to 4.83 (well above 50%).

5. Conclusion

Although medical students may not be the best judges of what is in their educational interest, unless they perceive the learning experience to be valuable, they may derive less benefit from exposure to a particular educational opportunity. So, students' views do matter and their reflections are important. In this study, the feedback from the students was positively encouraging. Unsurprisingly, not all the students liked the medium of opera and not all of them liked the subject of history of medicine. Interestingly, it tended to be the same students who disliked both the medium of opera and the subject of the history of medicine. Conversely, 60% of the students highly rated both the medium of opera and the topic of the history of medicine.

On reflection, the author felt that this opera programme did achieve the educational objective established at the outset. Firstly, the majority of students did indeed appreciate and value the vehicle of opera to present the history of medicine (Q1, Q2 and Q3). Secondly, the students felt that opera impacted on them emotionally and increasingly so as the year progressed (Q5 and Q8). Thirdly, the students felt that opera enhanced their empathy, listening skills and understanding of the human condition (Q6, Q7, Q9). Finally, by encouraging group discussion of both patients' and doctors' emotions and distress as seen in the operas, the author was pleased to see the students reported that opera helped build closer bonds among their peers (Q4), an important element in building resilience.

An obvious limitation of this study was the small sample size of 24, the lack of a control group and its location to only one site, limiting any generalisability of the findings. Further interpretation is also limited by the absence of any longitudinal data to determine the impact of the opera programme on the students' development as doctors. The author also recognises that the students were not tested on knowledge acquisition on the history of medicine. Nevertheless, if one regards this as a pilot study, the student feedback suggests that both the medium of opera and the content of the history of medicine are perceived as valuable and important by the majority of students and this provides a good starting point for further study.

Acknowledgements

The author wishes to thank Mr Ian Sheratte, an opera enthusiast for his considerable help selecting opera productions for the students and all the 24 students who participated so wholeheartedly and generously in the opera programme.

Ethics Statement

University College London Research Ethics Committee approved this project in 2017-Project ID 12399/001.

External Funding

This article has not had any external funding.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

References

- Cordell, E. F. (1904). The Importance of the Study of the History of Medicine. *Medical Library and Historical Journal*, 2, 268-282.
- Loveless, B. (2025). *Understanding the Learning Pyramid*. Education Corner. <https://www.educationcorner.com/the-learning-pyramid.html>
- McGee, G. (2018). Rapid Response: The Importance of Medical History in Medical Education. *BMJ*, 324, 1533.
- Porter, R. (2001). *The Cambridge Illustrated History of Medicine*. Cambridge University Press.
- Schamroth, A., Berman, H., & Spencer, N. (2020). Can Medical Humanities Impart Empathy and Resilience Skills to Medical Students? *MedEdPublish*, 9, 218. <https://doi.org/10.15694/mep.2020.000218.1>
- Soriano, J. B. (2018). On Doctors and Their Operas. *Chest*, 154, 409-415. <https://doi.org/10.1016/j.chest.2018.03.015>
- Treadwell, T. (2018). Why Should I Care About the History of Medicine? *Wounds*, 30, A9.
- Willich, S. N. (2006). Physicians in Opera—Reflection of Medical History and Public Perception. *BMJ*, 333, 1333-1335. <https://doi.org/10.1136/bmj.39056.464074.55>