

ORIGINAL RESEARCH

Impact of art and reflective practice on medical education in the emergency department

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Abstract

Objectives: There is heightened intrigue surrounding the application of arts-based pedagogy in medical education. Art encompasses multiple forms of expression and is used to convey specific meaning and emotion, whereas provoking critical reflection. Our aim was to explore the effectiveness of art and reflective practice in medical education, in the context of the ED.

Methods: Longitudinal methodological study design. Prior to the first, and after the final clinical practicum, medical students watched a 3-min film: ‘The Art of the ED’. Written reflections focused on changing perceptions towards the film during their medical education programme. Data were thematically analysed.

Results: Three themes were collected from 25 written reflections and included: ‘professional growth’ exploring personal and professional development across the medical programme; seeing ‘patients

are people’; and the purpose, structure and function of an ED exposed in ‘the reality of ED’. Results highlight that arts-based pedagogy can facilitate meaningful and critical reflection in medical students, whereas also fostering professionalism. Reflecting on the film broadened their perspective into a realm of new possibilities, challenging them to identify implicit bias around ED, and promote professional identity formation.

Conclusions: The combination of art and reflection in medical education enhances reflective learning and can lead to transformative change, including the development of core doctoring values of service, empathy and respect for patient. There are clear benefits to medical education incorporating more arts-based pedagogy that promotes reflective exploration and interpretation of the psychosocial context of health and illness, delivery of more holistic models of care and their role as doctors.

Key findings

- Meaningful reflective practice induced through arts-based pedagogy encourages learners to acknowledge and explore their personal and professional worldview.
- The combination of art and reflection in medical education can lead to transformative change while developing core doctoring values, empathy to patients and more holistic approaches to care.
- There are clear benefits to medical education incorporating more arts-based pedagogy that promote reflective exploration and interpretation of the psychosocial context of health and illness and their role as doctors.

Key words: *medical education, medicine in art, reflection, medical humanities, qualitative.*

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Introduction

Medical education focuses on the theory and practice of medicine,¹ and often privileges scientific approaches to human physiology and pathology.² This empirically driven traditional approach to education can result in parts of the curriculum still being taught in insensitive and unimaginative ways;³ however, this is changing with education research describing innovative methods to engage, inspire and

evolve medical education.⁴ In contrast, a holistic approach to medical education emphasises that a person is more than the summation of their physical parts and that one's biological, psychosocial and spiritual aspects contribute interdependently to their overall health.^{5,6}

There is a growing interest in using arts-based pedagogy in medical education to teach holism. This contemporary educational approach facilitates reflection, fosters meaning making and helps develop insight, expanding the learner's worldview of medicine.⁷ Art incorporates multiple forms of expression and is used to convey meaning and emotion, which is often difficult to represent through traditional teaching strategies.⁸ Art can stimulate meaningful reflection as it intentionally encompasses previous experiences, feelings, interpretations and responses to facilitate new insights and learnings.^{9,10} The combination of art and reflection can induce transformative change⁸ including visual methodologies (like film) that assist medical students to integrate the 'art' and 'science' of medicine.¹¹

This research explored the effectiveness of art and reflective practice in medical education, in the context of the ED.

Methods

Study design

A longitudinal qualitative methodology was utilised. Linked to the interpretivist paradigm, qualitative design seeks truth from human experiences and behaviours,¹² acknowledging that there is more than one truth that is subjective to the individual. A qualitative approach was utilised to capture a holistic understanding of participants' thoughts, opinions and perspectives and how they interpret their experiences.¹³

The Art of the ED film (duration 2.5 min) was co-created by author DMF and Steve Wise as an artistic piece with music and no dialogue (see: <https://vimeo.com/206340916/a82b8cfb6d>) to convey the artistry of what happens in ED. In 2015, first-year medical students used the film as a tool for pre-reflection to their first

clinical practicum. Students submitted guided written reflections after watching the film.¹¹ The process was then repeated in 2018 following the same students' final 5-week clinical practicum in an ED. Students were provided their original first-year reflection and asked to re-watch the film and consider their current perception of the film compared to their first-year reflection using guiding questions (Table 1). Approval was granted from Monash University Human Research and Ethics Committee (24129) and the University of Western Australia Human Research and Ethics Committee (RA/4/1/7323). All participants received an explanatory statement, participation was voluntary and consent was implied through submission of reflections.

Study setting and participants

The University of Western Australia facilitated a four-year postgraduate Doctor of Medicine (MD) programme, incorporating brief clinical experiences within the ED in their first and second years of study, and a 5-week attachment in the final year. All students were required to maintain an MD e-portfolio of completed activities to reinforce critical reflection of their academic and professional development and plan for continual learning. The Art of ED reflections is an example of

one of the arts-based components of the e-portfolio.

Data analysis

Thematic analysis, whereby patterns were identified and delineated in the reflections was used.¹⁴ Reflections were read repeatedly to develop familiar and deep understanding of the data, including identified categories, which were then grouped according to similarities, differences and relationships to generate themes (Table 2). The development and refinement of categories and themes occurred in an iterative way, ensuring validation and accuracy.^{1,14} From 25 reflections, 19 categories were consolidated into three themes – 'Professional growth', 'Patients are people' and 'The reality of ED' (Table 2).

Results

Of a cohort of 240 first-year medical students, 123 consented for the study and submitted an original reflection in 2015;¹¹ however, because of attrition, only 25 final-year students (in 2018) submitted a subsequent reflection. Three main themes are presented below with de-identified quotes to support results. It is noted that some of the reflections do not specifically relate to the film but instead to students' clinical experiences. The film has provided a stimulus for students

TABLE 1. Guiding questions for the final reflection

Questions	
1.	Do you remember watching The Art of the ED in your 3rd week of beginning medical school?
2.	If YES, write down a few words about what you remember? (It is OK if you do not remember - leave blank)
3.	What is the first word that pops into your head when you watch this film?
4.	Which patient in the film stood out and why?
5.	What part of the film resonated/connected with your recent ED clinical placement and why?
6.	How does watching this film help you reflect and prepare for your internship next year?
7.	What surprised you most about your written reflection from Year 1?
8.	How have your perceptions of the film and ED changed?

TABLE 2. Categories and themes identified

Categories	Themes		
	Professional growth	Patients are people	The reality of ED
Becoming comfortable and capable	✓		
From the unknown to the known	✓		
Personal growth	✓		
Professional maturation	✓		
Reflective practice	✓		
Patient perspective		✓	
Human side of medicine		✓	
Science side of medicine		✓	
The need for empathy and compassion	✓		
Expanding world view	✓		
Reaffirmation of the doctor they want to be	✓		
Burden of interns	✓		
Interns in ED	✓		
Identifying as an intern	✓		
Preconceptions about ED			✓
The logic of ED			✓
ED is not a TV show			✓
The Art of ED film demystified			✓
A place of opportunity			✓

to reflect on their development throughout the course and incorporates all facets of their education.

Professional growth

This theme relates to participants' professional growth and identity development as a doctor over the medical programme. Perceptions of inadequacy and uncertainty were present in initial reflections, described as feeling unskilled, helpless, incapable and uncertain about their role as doctors, *'at the time it imparted a sense of helplessness that was influenced by the fact that I had no medical knowledge to speak of and had never actually interacted with patients'* (P5).

However, a greater understanding and familiarity emerged from subsequent reflections, demonstrating an increased confidence and competence regarding professional ability:

My first year 1 medical student self-thought [I] would feel helpless during placement. Many critically ill people and nothing a medical student could do. I now feel the exact opposite, I feel like I can help and will do next year and beyond. I am more confident... (P25).

The notion that medical students are only passive observers in their role was challenged as some participants realised they authentically contributed to healthcare provision:

I thought I would not be able to help out much, and I would spend the majority of time talking to patients. However, during my placement I have been treated as a 'pre-intern' and been given a lot more responsibility than I expected (P21).

Although participants initially indicated personal doubt in working in collaborative ED teams, stating *'I assumed that students were a burden to doctors working in this busy [ED] environment'* (P17). Subsequent reflections reported a growing sense of usefulness in the ED *'the situation [in ED] is not helpless and I am able to contribute to patient care'* (P25) and *'there was a clear place for us to be useful, which doesn't happen on all rotations'* (P7).

Feeling empowered to provide care, participants started to reflect on and actively construct their professional identity in their future role as an intern. One participant expressed:

I feel much more capable to be in ED...and I feel more adept...I am much more optimistic about

being an intern in ED than I would have been at the stage where I wrote that other reflection and I believe this has been induced through exposure. I think I have an understanding of the challenges of internship... I believe I too can achieve this [internship], even in the more difficult rotations such as the ED (P4).

Participants also contemplated the doctor they aspired to become and what they needed to do to achieve this: *'...the right attitude to encounter [the] ED environment by balancing the elements of professionalism and empathy' (P20).*

There was also evidence of emotional growth, as participants initial reflections (Year 1) included feeling overwhelmed with anticipated responsibility in the ED; however, in subsequent reflections (Year 4), words such as 'anxious', 'scared' and 'feeling nervous' were replaced with 'capable', 'confident' and 'prepared', indicating a new sense of ability and professional growth. One participant stated, *'I talked about being anxious and scared a fair bit – I feel much more comfortable and confident in dealing with sick patients [now]' (P11).*

The film provided a safe space to reflect upon previous clinical ED experiences and acknowledge emotional growth and resilience. One participant detailed *'... [I] surprised myself with the emotional resilience I have had throughout some quite horrible experiences' (P7).* This included a shift towards being more pragmatic and emotionally self-regulated in their final year, *'I believe I see ED in a more practical rather than emotional sense [now]' (P24).*

Patients are people

An evolving humanism towards ED patients, considering human stories encouraged them to holistically 'see' people with needs; not just as physiological problems needing treatment: *'the importance of treating patients as people' (P13)* and understanding

'that there is a story behind each of the patients' (P18).

Reflecting on the human side of emergency medicine, participants felt more connection with patients, recognising that each patient presenting to ED is unique with individual circumstances and complex needs: *'I can understand what is happening medically, and that leaves me with more time and space to recognise the human stories conveyed by the film' (P2).*

Participants reflected on the emotional impact ED has on patients and families while seeking care, recognising that an unfamiliar environment coupled with uncertainty can lead to vulnerability and isolation for many patients, *'ED can be overwhelming and isolating' (P22).*

Empathy and compassion were contemplated, particularly through prioritising patients' experiences and providing opportunity for them to voice their needs. One participant reflected, *'I have come to learn that although ED is a busy environment, it is important to take the time to get to know a patient, their issues and their expectations' (P23).*

Another participant learnt to *'take the time to be empathetic with patients and explain what is going on and ensure patients have any question they may have answered. This can make patients feel less overwhelmed with being in ED' (P22).*

The reality of ED

This theme demonstrated a more mature awareness of the dynamic purpose, structure and function of the ED and those within it. Originally (Year 1), participants conveyed feeling melancholy towards patients and families: *'I saw ED as a "solemn" place where the most unwell people visited, and I felt sympathy for patients who needed to go there' (P23).* This was contrasted with more positive final year reflections (Year 4), with deeper understandings and hope:

My previous self-thought that the whole situation is helpless, people are alienated and everyone is upset. I found that there

are happier moments too, there are relaxed patients in the film and patients happy to be with their partners and patients finally getting the care they need (P25).

On reflection, participants acknowledged a widening view of patients attending ED from frail and ill-fated to include minor, non-life-threatening issues: *'I was given the impression that patients attend ED because they are in serious trouble. My time in a real ED has shown me that patients do present with minor scratches and tummy aches' (P5).*

The purpose of ED was also seen in the second reflection, describing ED as a place of opportunity; offering a service for the community:

I believe that my initial perceptions of ED were one of a service-user mindset ... However, after completing my ED rotation and re-watching the film from a different perspective, my perceptions of ED has changed to one of a service-giver (P23).

Although the ED was initially regarded as a busy, highly stressful and chaotic workplace, perceptions evolved to an appreciation for the structure and function of ED; recognising efficiencies are because of deliberately structured approaches: *'I was able to recognise the calm and control that exists in the ED (even in stressful situations) on my very first half day. This perception has only been reinforced' (P19).*

A newfound awareness of the multidisciplinary team function was also accentuated: *'I have a much better appreciation of the roles of the different health professionals involved in patient care and how the team works in practice' (P13).*

Other participant reflections included, *'[teamwork] is one of the most important factor(s) that determines ED efficiency' (P16)* and, *'I have come to appreciate the function of ED on a deeper level, its interconnections with other disciplines and the flow and structure of ED in the seeming chaos' (P23).* Some participants reflected that the film did not

illustrate the collaborative approach to care they had experienced in the ED: *'the team environment was not evident in the video [film] and is an important part of an ED shift'* (P14).

Discussion

This qualitative research revealed that in this instance, arts-based pedagogy can facilitate meaningful and crucial reflection, fostering professionalism. In this research, when reflecting on the film, participants demonstrated a broadening of their perspective, acknowledging implicit bias around ED,¹⁵ creating a space for new possibilities in ED and professional identity formation. This is consistent with other research that found employing artistic works as an educative tool can shift learner focus, removing them from their accustomed perspective into a realm of new possibilities.⁸

This research identified the educational potential of using the arts to surface implicit bias around emergency medicine which refers to perceptions, attitudes or prejudices that reflexively alter one's behaviour, clinical decisions and interpersonal interactions in an inequitable way^{16,17} without deliberate intent.^{5,18} Reflections of the artistic film designed to accurately portray the reality of ED have been found to challenge individual perceptions of a medical student's role in healthcare¹⁹ and educational strategies in medical education, suggesting benefits to incorporating more arts-based teaching pedagogy^{2,8} that stimulates consideration of holistic medicine and models of care.^{6,20}

The use of art and reflection to foster professionalism, including identity formation was a second key result of the present study and important in supporting learning through the transition from student to doctor.^{7,21} As seen in this longitudinal study, clinical experiences over the medical programme influenced the development of personal and professional identity as a doctor by strengthening or provoking change.^{6,8,22,23} These clinical experiences can be complimented by incorporating arts-based pedagogy to

humanise medical education further and focusing on holism that considers the psychosocial context of health and illness.^{11,20,23,24}

As demonstrated in these results, the interpretation of art is unique to each individual with learner's knowledge, experience and timing influencing the construction of meaning and insight.^{2,8} In this way, art can stimulate and foster unique reflective processes by encouraging the development of one's unique professional identity, affirmation and commitment of core doctoring values by stimulating deliberate analysis and interpretation of experiences.^{9,25} This shift in perceptions across 4 years of study was witnessed in their changing perception of the ED, suggesting in this instance, arts-based pedagogy can facilitate dynamic, developmental process that has the potential to integrate personal and professional growth, including reflective insights, knowledge and behaviour to deepen one's connection and commitment to the profession.^{9,25} Employing art and reflection as a learning tool can assist in consolidating one's philosophy of medicine, whereas encouraging holism in their future practice.⁷

Strengths and limitations

Although the present study affirms the use of arts-based pedagogy and reflection in medical education, it must be acknowledged that the data were collected 4 years ago and there was lack of demographical data available. The longitudinal nature of the study resulted in a significant drop in participants from Years 1 to 4 (123–25).^{11,26} Therefore, further research is necessary before transferability of the results across different settings and student populations can be determined.²⁷ In addition, this arts-based strategy was a brief one-off intervention in the medical curriculum. However, a strength of the study was data analysis being undertaken by researchers who did not contribute to the design, delivery or provision of the curriculum, promoting credibility by ensuring an independent viewpoint.^{10,27} Furthermore, adherence to

and documentation of a detailed methodology and credible framework of thematic analysis¹⁴ displayed strong and consistent themes promoting confidence in the results.^{10,27}

Conclusions

Meaningful reflective practice induced through arts-based pedagogy encourages learners to acknowledge and explore their personal and professional worldview. In the present study, the 'The Art of the ED' film challenged personal and professional perspectives towards doctoring, patients and the ED. An evolving change in professional identity was also highlighted across the 4-year medical programme. Integrating arts-based pedagogy offers a holistic approach to medical education that can stimulate unique reflective processes to support clinical and empirically driven learning.

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Competing interests

None declared.

Data availability statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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