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INTEGRATING THE ARTS IN SOCIALLY ACCOUNTABLE HEALTH PROFESSIONAL EDUCATION WITH A CASE STUDY AT JAMES COOK UNIVERSITY

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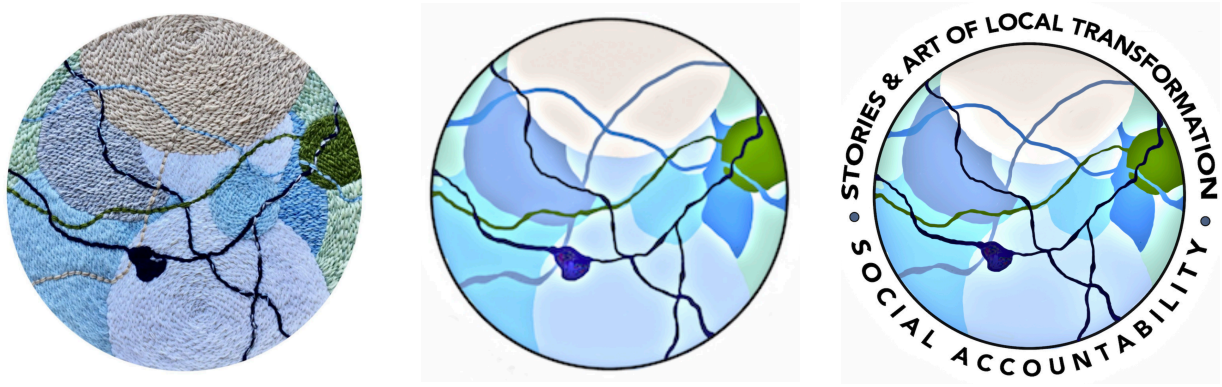
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Abstract: This research examines how Socially Accountable Health Professional Education (SAHPE) fosters transformative learning and professional identity formation, focusing on the multi-site *Stories and Art of Local Transformation in Health Education* project. SAHPE aligns education, research, and service with the needs of underserved communities. Using arts integrated methods and the parallaxic praxis framework, the project engaged students and faculty in creative workshops and reflective dialogue about social accountability. Case study findings from James Cook University show that a socially accountable curriculum—enhanced by diverse recruitment, rural placements, and faculty role modelling—supports equity-oriented values and advocacy skills. The arts enabled participants to express complex experiences, deepening compassion, and critical reflection. Explicit arts integrated SAHPE approaches may prepare future health professionals to address health disparities and promote universal health care.

Keywords: social accountability; health professional education; arts integration; parallaxic praxis; universal health care

Figure 1
Depiction of the SALT-HE Logo



Note: The *Stories and Art of Local Transformation in Health Education* logo was created from a needle-punched artwork representing global networks of collaboration and flow.[1] Artist: P. Sameshima. Digital logo: T. Orasi.

Universal Health Care is founded on the equitable distribution of healthcare resources and the development of a workforce responsive to the needs of underserved populations. Health profession education institutions have a vital role: to produce graduates who are not only clinically competent but also socially accountable—able to address health disparities, understand social determinants of health, and advocate for marginalized groups.

Socially Accountable Health Professional Education (SAHPE) has emerged as a guiding paradigm, defined by a commitment to education, research, and service that addresses the priority health concerns of local communities, particularly those underserved due to discrimination or structural barriers (Boelen & Heck, 1995; Training for Health Equity Network [THEnet], 2024). A key challenge remains, however: how can health profession education institutions effectively instill the values, attitudes, and competencies needed for graduates to fulfill this mission?

The *Stories and Art of Local Transformation in Health Education* (SALT-HE) project, an international, multi-site study, seeks to answer this question. Supported by the Canadian Social Sciences and Humanities Research Council's New Frontiers in Research Fund, SALT-HE explores how socially accountable medical education can foster transformation in health. Through creative, reflective, and dialogue-based activities involving both students and faculty, SALT-HE aims to deepen understanding of social accountability, professional identity, and community engagement. This paper highlights the arts integration project design within SALT-HE, focusing on the initiative at James Cook University (JCU) in Northern Australia. We examine how the arts have

been used to foster transformative learning and discuss implications for the broader field of health professional education.

Health profession education institutions striving for social accountability collaborate with governments, health service organizations, and communities to identify key health priorities and incorporate them into curricula, clinical placements, and core competencies, including teachings regarding social determinants of health. Faculty, including practising clinicians, model a commitment to public service, while curriculum and research activities holistically integrate social accountability principles (Ross et al., 2014).

Background

SAHPE

The concept of social accountability in health professions education, first articulated by Boelen and Heck (1995), urges medical schools to orient education, research, and service toward addressing the priority health concerns of their communities. This entails a commitment to equity, community engagement, and responsiveness to local needs, particularly for underserved or marginalized populations. Globally, SAHPE is promoted by networks such as THEnet (2024), with key features including:

- community-oriented curricula
- partnerships with health services and communities
- emphasis on social determinants of health
- experiential learning in underserved settings
- faculty role modelling of social accountability

Despite increasing rates of adoption, challenges remain in translating this vision into practice, including resistance to curricular change, limited faculty development, and difficulties in measuring outcomes (Ross et al., 2014).

Accreditation bodies, such as the Committee on Accreditation of Canadian Medical Schools (2023) and the World Federation for Medical Education, stipulate that social accountability must be reflected in a school's mission, curricula, and outcome measures. Schools are required to align activities with societal needs and demonstrate their impact on community health (Abdalla, 2014; Global Consensus for Social Accountability of Medical Schools, 2010).

The SALT-HE Project: An Overview

The SALT-HE project is an international, multi-site research initiative exploring how arts integrated methodologies can illuminate and advance social accountability in health professional education. The study explores the values and meanings of SAHPE by researching how social accountability is being expressed in different ways across different medical schools. The medical schools involved in this paper include the Northern Ontario School of Medicine (NOSM in Thunder Bay and Sudbury); James Cook University (JCU) Medical School in Australia; Faculty of Medicine, Memorial University of Newfoundland (MUN); and the University of New Mexico School of Medicine (UNM). Central to SALT-HE is the use of the arts to engage students, faculty, and community members in creative workshops, art-making, and dialogic analysis. The project goals listed on the SALT-HE website are to:

- Explore how social accountability is understood and enacted in diverse contexts;
- Foster critical reflection and dialogue among participants; and
- Generate new knowledge and pedagogical approaches for SAHPE. (SALT-HE, 2025)

Methodology

Arts Integrated Research and Pedagogy in Health Education

Arts integrated research refers to research that involves the arts in any part of the research process. Arts integrated research is an umbrella term that includes arts-informed inquiry (Knowles & Cole, 2008); arts-based educational research (Barone & Eisner, 2012); a/r/tography (Lascik et al., 2024); creative analytic practices (Richardson, 2000); and parallaxic praxis (Sameshima et al., 2019), among others. Arts integrated research has emerged as a powerful methodology for exploring complex, affective, and embodied dimensions of professional identity, ethics, and social justice in health education (Sameshima et al., 2019). The methodologies encompass a range of practices—such as visual arts, poetry, performance, and narrative—that enable participants to express, question, and transform their experiences.

Key benefits of arts integration in health professions education include: fostering empathy and perspective-taking (Perry & Maffulli, 2021); teaching compassion (Cheu et al., 2022); encouraging critical reflection and dialogue (Cheu et al., 2022; Clithero-Eridon et al., 2024); making visible the hidden curriculum and tacit knowledge (Bleakley, 2015); and supporting transformative learning and professional identity formation (Cheu et al., 2022; Clithero-Eridon et al., 2024; Wear & Zarconi, 2008). The *parallaxic praxis*

methodology, developed by Sameshima et al. (2019), was used in the SALT-HE project specifically because it offers a structured approach to arts integrated research, emphasizing multi-perspectival analysis, dialogic engagement, and the co-creation of knowledge across disciplines.

Parallaxic Praxis: A Multi-Modal, Arts Integrated Approach

The SALT-HE project employs parallaxic praxis (Sameshima et al., 2019) as its core methodological framework. This methodological framework is well aligned to enable exploration of local values, meanings, contexts and lived experiences of SAHPE. Parallaxic praxis leverages individual and collective strengths, while utilizing multi-perspective analysis that involve multi-model investigations via dialogic conversations and created artworks, resulting in innovative knowledge creation that potentially creates new possibilities across disciplines and content areas. Parallaxic praxis is characterized by: multi-modal data collection—combining visual arts, narrative, and dialogic interviews; collaborative analysis—engaging participants and researchers in iterative, multi-perspectival analysis; and knowledge co-creation—generating new insights through the interplay of art, dialogue, and reflection (see Sameshima et al., 2019).

There are three phases in the parallaxic praxis model. The first has been named the Data Phase, in which researchers collect data using both traditional and non-traditional methods. The second phase is called the Analyses Phase, in which interdisciplinary teams interpret and transform data through diverse disciplinary lenses and creative methodologies. The third phase, the Rendering Phase, describes the stage in which completed artefacts are used to provoke discussion, share interpretations, and generate new insight. Figure 2 is an individualized visual of the SALT-HE team's progressive process through the three phases. The parallaxic praxis model is continually cycling and iterative.

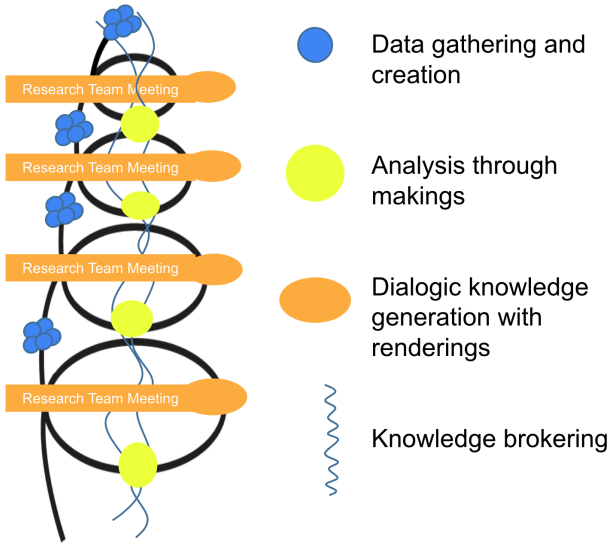
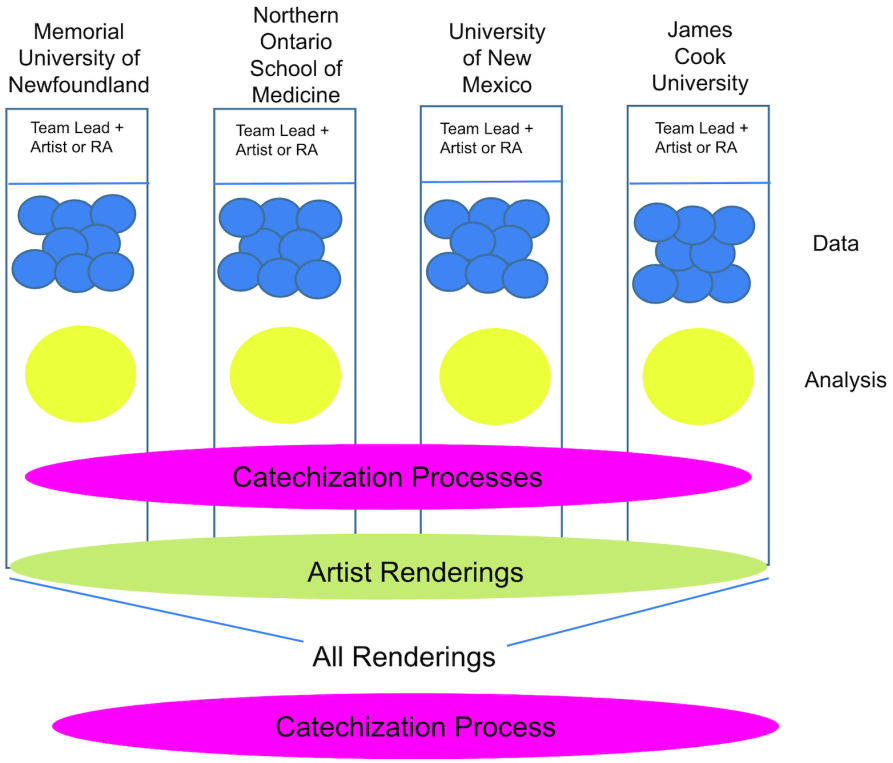


Figure 2
SALT-HE project design of the parallaxic praxis model

The next graphic (Figure 3) illustrates how the various sites individually collected their own data and carried out independent on-site analyses. The teams then participated in *catechization processes*, which are specific questioning techniques that allow for multi-modal analysis (see Sameshima et al, 2019). The individual team leads then came together to talk about the site artworks. The artist renderings were then created by artist-researchers and these works, along with participant works, were discussed as a collective.

Figure 3

Site-focused analyses occurred before the collective discussions



Artwork Examples

SALT-HE arts projects can be viewed online at the Virtual Art Gallery. Artwork in the gallery includes artworks by participants in the study as well as the research team. Three examples by artist-researchers (Figures 4, 5, 6) are included below. Each artwork is based on a different data set. Note that while there were four medical schools involved, NOSM had two sites. The following artworks refer to the data from Memorial University, NOSM in Sudbury, and NOSM in Thunder Bay, respectively.

Ann-other Collateral (Figure 4) is a poem and video created by Pauline Sameshima in response to data collected at Dr. Jill Allison's site at Memorial University

in Newfoundland. Using the Parallaxic Praxis methodology, an interdisciplinary team of researchers analyzed artwork produced by participants to better understand their experiences of social accountability. The resulting video, which is linked here, reflects this analysis. The artist explains that the video emphasizes how closely its elements are intertwined—the video filter (as the constructed frame), the mannequin (as the content), and the poem (as the experience). This interconnectedness is meant to illustrate how difficult and complex it is to separate these components when trying to create systemic change.

Figure 4
Ann-other Collateral



Note: Artist: P. Sameshima, 2021. Site Lead: J. Allison. [Installation, video & poem]

Data from the Sudbury NOSM site with site lead, Dr. Hoi Cheu, inspired the following artwork, titled *Fractals* (Figure 5), by artist-researcher Tashya Orasi. She explains that the mediums, colours, and composition play with the character of fractals as a metaphor for conceptualizing social accountability in complex health systems. While fractals themselves are used in health care for disease modelling, here they represent a complex mix of systems, networks, and living ecosystems that reflect all or some part of the whole, and the need for connectedness and reflection in social accountability. For more information on *Fractals*, please see the *Canadian Medical Education Journal* (Orasi et al., 2022).

Figure 5
Fractals



Note: Artist: T. Orasi, 2021. Site Lead: H. Cheu. [Mixed media, recycled materials, acrylic on canvas, 36" x 30"]

Both artworks recognize the complex challenges involved in analyzing how social accountability can be more effectively taught in medical education and what it means. The team's analysis of the stories and art shared by participants highlights several key challenges and constraints, which are consistent with the findings of Wasim et al.'s (2025) scoping review and thematic analysis. These include,

- Introducing socially accountable curricula: many medical schools still rely on traditional curricula that give little attention to primary care, rural health, or community engagement;
- Financial and workload limitations: a lack of funding and heavy workloads make it difficult to implement and sustain socially accountable programs;
- Evaluation tools: there is often a shortage of effective methods and tools to assess whether social accountability goals are being met;
- Matching community needs: recruiting students from diverse backgrounds and preparing them to meet the specific needs of the communities they will serve remains a challenge; and
- The inherent complexity of social accountability: implementing social accountability requires flexibility and adaptation to local contexts (See Washim et al., 2025).

Adapting to local contexts is critical. Social accountability is shaped by local histories, cultures, and health inequities. For example, First Nations health is central at

JCU, while rural and remote care is a focus at NOSM locations. Participants at all sites grapple with tensions between idealism and systemic constraints, highlighting the need for ongoing support and institutional commitment.

The arts foster dialogue—art-making provides a non-threatening, creative space for participants to explore complex issues, surface tacit knowledge, and engage in critical dialogue. By integrating the arts into research, we were better able to draw out the personal stories amongst participants that revealed the complexities and difficulties involved in designing, implementing, and evaluating educational strategies that truly foster social accountability in future physicians.

To further echo the complexity, artist-researcher Ashley Walter created the untitled artwork below (Figure 6) from data collected at Dr. Erin Cameron's Thunder Bay NOSM site. Ashley explains that the layers of the artwork suggest the various realities of social accountability. Each layer interacts, supports, or influences the ones below/on top, suggesting that there are complex and multiple concurrent experiences and understandings at play. Please see the SALT-HE Gallery for additional artist-researcher artworks and participant art.

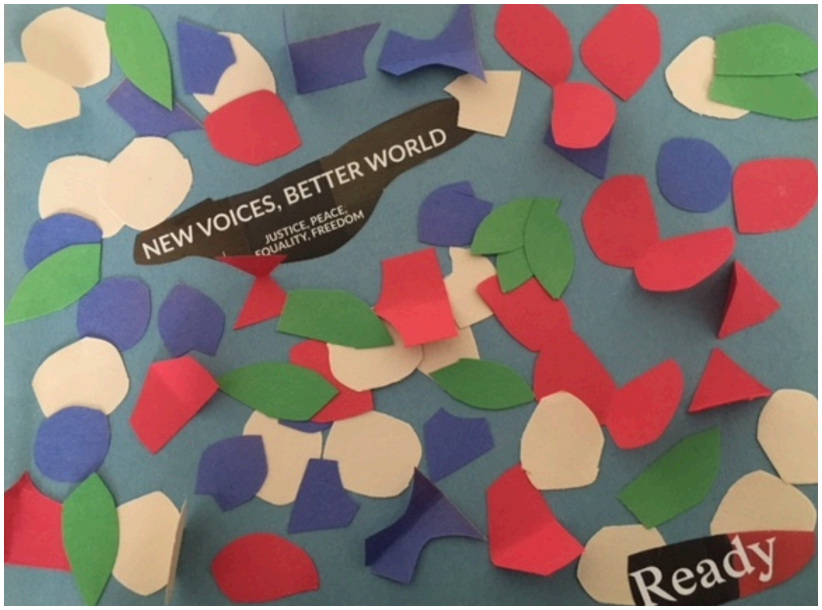
Figure 6
Untitled



Note: Artist: A. Walter, 2021. Site Lead: E. Cameron. [Mixed media, acrylic and collage on canvas, 36" x 30"]

Other artworks from the gallery include works by researchers (Figures 7 & 8) and by participants (Figures 9, 10, 11). Very briefly, the pink fan (Figure 9) iterates the accordion folding of complexity of social accountability; the black and white ink drawing (Figure 10) alludes to the importance of cultural, rural, underserved and Indigenous communities; and the quilt (Figure 11) represents the diversity of people united, reflecting community needs through collective care.

Figures 7, 8
Examples of art by researchers

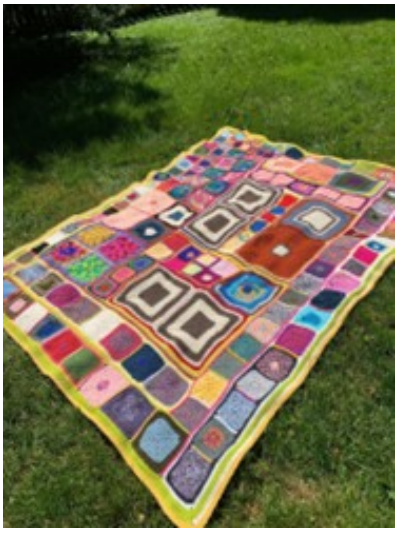




Figures 9, 10, 11
Examples of participant art







Case Study: James Cook University, Northern Australia

Context

The James Cook University (JCU) medical school commenced in 2000 with a mission to produce committed graduates able to practice across the local northern Australian region; in particular, in rural areas, and those with Aboriginal and Torres Strait Islander (First Nations) populations. To assist this mission, JCU's selection process preferentially chooses faculty and students from local, rural, underserved, culturally/linguistically diverse, low socio-economic, and First Nations applicants who have strong communication skills and who are values-aligned with those of the medical school.

Since 2010, JCU medical school has expanded its mission and curriculum from a focus on First Nations and rural medicine to fully integrating SAHPE principles, preparing graduates to serve all medically underserved and disadvantaged groups. These principles are embedded throughout the six-year curriculum with emphasis in Years 1–4 on clinical skills in cross-cultural communication, rural medicine, and global health:

- Year 1 covers the philosophy of social accountability medicine, social determinants of health, rural health, and Aboriginal and Torres Strait Islander health.
- Year 2 includes a dedicated subject on rural, remote, Indigenous, and tropical health (RRITH) and a four-week clinical placement in a rural or remote community.
- Years 3 and 4 integrate medical knowledge with holistic, patient-centred care, with Year 4 featuring a ten-week rural or remote placement.
- Years 5 and 6 focus on hospital-based rotations, where students become part of the clinical team. Year 6 offers leadership training and extended rural or remote placements leadership training and 10-, 20-, or 40-week placements (student choice).

Workshop Design and Participation

In 2021, the JCU SALT-HE team conducted four two-hour workshops, engaging: first-year medical students (n=8), final-year medical students (n=7), and teaching and research faculty (n=11). Most participants came from rural, low socio-economic, or culturally and linguistically diverse backgrounds, with some identifying as First Nations.

The research at the JCU site[2] in Northern Australia focused on how its social accountability curriculum and rural experiences in underserved areas may have influenced the students' and faculty's knowledge, beliefs, attitudes, and practices towards socially accountable practice. The data collection involved a series of workshops with first-year and final-year medical students, as well as faculty members. Participants created visual artworks representing their understandings of social accountability in medicine, followed by interviews exploring the meanings, values, and experiences underpinning their creations. Participants were invited to create visual artworks representing their perceptions of socially accountable medicine, using a range of materials (e.g., drawing, collage). They then participated in semi-structured interviews exploring: the narratives of their artworks, personal values aligned with social accountability, influential experiences (childhood, university, COVID-19), how social accountability is enacted in their daily practice, and reflections on learning/teaching in a socially accountable school.

After the art-making and interviews, catechization workshops facilitated group analysis of the artworks, drawing on concepts such as *mimesis* (echoing themes), *antiphona* (choral response), and *aporia* (tensions and puzzles) to surface key themes and insights. The catechization workshops engaged participants in group analysis, deepening the interpretation and validation of themes.

Data Collection

At the JCU site, data collection occurred in 2021 between January to June across four 2-hour workshops facilitated by the site researchers. All Year 1 (Y1) and Year 6 (Y6) medical students were invited to participate in the workshops via email, as were faculty who had an interest in SAHPE. At the workshops, facilitators introduced and discussed the general concepts and philosophy of SAHPE; they described how art-making could be used to foster meaning-making and personal understandings of concepts such as social accountability and showed their own artwork to clearly describe the process and demonstrate expectations, as well as reassure participants they did not need to be experts on social accountability nor artists to contribute. All participants were then invited to complete a survey (demographics, brief descriptions of their background, educational experience, and clinical/professional careers).

Participants then created visual artworks representing their perceptions of socially accountable medicine. A variety of art materials were made available: paper, drawing aids, coloured pencils, coloured pens, and crayons. Most participants chose to draw their representations; however, two participants also included collage (cutting and gluing found images together) (See Appendix A, Box 1 for more participant information).

After completing their artworks, participants undertook 10-20-minute interviews with Torres Woolley and Robyn Preston at JCU (See Appendix A, Box 2 for interview questions).

The interviews were transcribed verbatim and analyzed independently by the JCU researchers. An N-Vivo codebook and visual conceptualizations of emerging themes were discussed, then both visual and text analysis were merged for the arts integrated catechization process analysis (Appendix B), led by the artist-researcher, Pauline Sameshima via two team Zoom meetings and later with participants. The catechization process is a systematic analysis of multi-modal data sets. In this instance, the researchers discussed the themes across the entire artwork collection, considering intersections and tensions via the specific focal terms of mimesis, poesis, sorites and intertextuality to draw attention to specific themes and recurring ideas (Sameshima et al, 2019; Appendix B). Artworks in the project can be accessed at the SALT-HE Gallery. Written informed consent for publishing artworks online was obtained for each participant. A table of key artwork and interview themes was then created after the catechization meetings (Appendix C).

Several months later, Torres Woolley, Robyn Preston, and Pauline Sameshima facilitated two 90-minute catechization workshops (see Appendix D) with previous Y1 (now Year 2students) and faculty participants as a form of member-checking validation (Lincoln & Guba, 1985). For the catechization workshop, student and faculty group artworks were displayed on separate posterboards. After introductions and a refresher overview of the SALT-HE project, participants were divided into three groups seated before posterboards and responded to questions interpreting the artworks (see Appendix A, Box 3) and discussed these interpretations in their small groups. After sharing within their group, participants then joined a wider summary discussion to identify similarities and differences between JCU students and faculty members' journeys to becoming socially accountable health practitioners or educators.

Key Themes

Participants often shared backgrounds marked by socio-economic inequality, migration, and/or minority status. These experiences fostered commitments to social justice, community service, and advocacy for marginalized groups. Artworks frequently featured motifs such as: flames, candles, and suns—symbolizing passion, hope, and the potential to ignite change; hands—representing care, healing, and the reciprocal relationship between medicine and community; and roads and maps—signifying the journey of becoming a socially accountable practitioner.

Participants articulated core values including: equity and fairness in health care; respect for diversity and cultural difference; environmental stewardship; and the importance of giving back to one's community. Some artworks and narratives revealed tensions between idealism and the realities of medical practice, including the pressure to conform to biomedical norms, the risk of burnout and disillusionment, and navigating cultural differences and systemic barriers

Engagement in art-making and dialogue facilitated deeper reflection on personal and professional identity and recognition of shared values and experiences, and enhanced empathy and understanding of diverse perspectives.

After the final catechization process, the team members Pauline Sameshima and Robyn Preston worked with a local Aboriginal Australian artist, Karen Doolan (who also attended the final catechization workshop), to create a visual rendering that included themes from the summary table and catechization workshop findings. Figure 12, *Healing Hands*, responds directly to the key themes identified in the individual artworks across each of the student and faculty groups. The artwork is prominently displayed at JCU as a means of remembering and honouring the project. This form of residual research, made possible by artefacts and renderings, ensures the continuation of the project's goals long after the research grant ends. Furthermore, arts integration supports the formation of socially accountable professional identities, encouraging students to see themselves as agents of change.

Karen Doolan's art draws particular attention to the identified overall JCU participant themes, as well as allowing further generation of discussions regarding similarities and differences with the other SALT-HE teams. The artist notes:

> *Healing Hands* represents the medical profession as bounded by policies and procedures, rules and regulations (represented by the straight wood). Flexibility within the framework is shown by the branches around artwork; nature goes where it's meant to be, controlled by the lore of Mother Nature. Its natural curves are not straight but still perfect; it finds its way around obstacles and anything that's in its way, finding a way to survive. Four colours represent the Four Peoples of the world: black, white, yellow, red. Fire represents healing of the land; fire is good but also dangerous if not controlled in the right way. Mountains and hills show country and place and being grounded. Water is sacred and is life. There are many cultures and laws in this world. The universal law is to care and help each other. The touch of hands gives comfort, care and compassion. To find comfort, care and compassion, you will always find it within nature and the great spirit of all things.

Figure 12
Healing Hands



Note: Artist: K. Doolan, 2023. Site Leads: T Wooley & R. Preston. [Mixed media, acrylic and on wood]

Discussion

The results of a social accountability medical curriculum on students and faculty have not previously been explored (Barber et al., 2022). This study shows that the parallaxic praxis arts integrated method offers valuable insights into how explicit social accountability philosophies and training influence learning and professional identity.

The findings indicate that a socially accountable curriculum inspires students and faculty to become socially responsible doctors and educators, motivating them to encourage others as well. Social accountability medical education provides a clear framework for developing essential skills and knowledge, such as cross-cultural communication and understanding social determinants of health. Students and faculty

described a “good” socially accountable doctor as someone who is respectful, culturally informed, empathetic, and able to build collaborative partnerships with patients, especially from underserved groups. Learning about socially accountable medicine thus supports the formation of a professional identity focused on social accountability and promotes ongoing self-directed learning (Xu et al., 2024).

Preston et al. (2016) found that students and faculty at four socially accountable medical schools, including JCU, shared similar views of socially accountable medicine: meeting local health needs, accepting personal responsibility as practitioners, and recognizing the influence of their school’s programs. Our study also found that JCU participants understood that systemic barriers—like limited resources, inequitable access, and institutional racism—restrict their ability to fully practice socially accountable medicine but believed that advocating on their behalf as individuals or as a team may somewhat counter health system barriers.

This study suggests that socially accountable medicine resonated with many students and faculty because of shared backgrounds—such as growing up in socially or economically disadvantaged areas—and strong beliefs (sometimes religious) in community service and social justice. JCU’s intentional selection of applicants from rural, low socio-economic, culturally or linguistically diverse, and First Nations backgrounds further contributed to these commonalities. As a result, socially accountable medical concepts were easily understood and integrated into participants’ belief systems.

Year 1 students’ perceptions of socially accountable medicine were mostly fact-based around social determinants of health and health disparities in under-serviced rural and First Nations populations, demonstrating that deliberate didactic teaching of socially accountable medical principles and associated concepts of health inequality and inaccessibility is learnt and understood. Further, the artwork and interview findings strongly suggest Y6 students are further influenced by their later social accountability curriculum and training experiences (particularly extended rural placements), which enhanced understandings of the healthcare challenges as well as cultural and social contexts of communities across JCU’s reference area of north and west Queensland. Y6 students and, to a greater extent, faculty who have been practising doctors had more fully incorporated social accountability into their developing professional identity’, having learned how the principles of social accountability could be integrated into their daily practice for their chosen medical career either as a generalist or specialist, rural or urban practitioners. In addition, Y6 students and faculty who were practising clinicians also believed socially accountable doctors are more clinically well-rounded practitioners who have a better understanding of the holistic health needs and health disparities of

local communities due to the extensive and diverse rural placement and hospital ward experiences mandated in the curriculum.

Participating Y6 students and faculty also had more realistic expectations for how disparities can be improved, as they had first-hand experience of the difficulties in making real changes to systemic health inequities in poorly resourced communities. As a result, they were more likely to state social accountability practice was more about them being part of a team—to collaboratively advocate for improving health outcomes of disadvantaged individuals and communities—than undertaking advocacy individually. Often this intent for advocacy was inspired by doctor role-models either at the medical school or in clinical settings. Thus, a social accountability curriculum involving faculty role-modelling and community experiences appears to encourage professional identity formation towards being socially accountable doctors. This is supported by Ellaway et al.'s (2018) research with eight medical schools (including JCU) whereby mentors, role models, and learning in community settings helped shape students' understandings of social accountability.

Year 6 students' more sophisticated understanding of socially accountable medicine also echoes Ritz et al.'s (2014) call for medical students to understand that as well as helping marginalised populations through providing care, their future clinical role also involves advocating for change to the structural forces causing this inequity; appreciating patients and communities as partners in their own care; and recognizing their own power and the imbalances of power.

The findings from this study suggest that SAHPE is well aligned with several recent recommendations for health professions education. These include: making health professions education more responsive to society's needs (Harden, 2024); encouraging students to be self-directed partners in their education by engaging as practitioners, teachers, and collaborators in curriculum development (Harden & Harden, 2023); reducing reliance on passive, lecture-based teaching, especially when preparing students to interact with and learn from patients (Van Liew et al., 2024); and providing training that addresses not only clinical care but also the social determinants of health, which account for 50% of health outcomes (Hood et al., 2016).

Overall, this study demonstrates that school-wide and explicit approaches to socially accountable medicine—taught conceptually to early year students and role-modelled by faculty and more advanced students, and later providing them with classroom skill teachings and extensive placements in underserved areas with underserved populations—appears to make socially accountable medicine "real" for students. This provides them with a good understanding of socially accountable medical concepts and motivates them to incorporate the principles and values of social

accountability into later practice. This SAHPE approach may have also helped students and faculty understand why social accountability is a key focus of the school and the most effective strategy of improving the significant disparities in health outcomes existing across local northern Queensland communities and population groups. It is hoped that encouraging JCU and other medical graduates to be more socially accountable in their practice and in undertaking patient and health system advocacy activities will indeed produce a medical workforce willing and able to deliver the promise of universal health care to local communities.

This study has some limitations as participants were a self-selected group; therefore, it can be assumed that those interested in, or identified with, socially accountable medicine volunteered, and can be considered 'information rich' cases. Additionally, Year 6 students did not attend a catechization workshop due to graduation; instead, they were sent a summary of the findings and invited to provide feedback.

In addition, it must be stated that qualitative research is usually only generalizable to the specific context wherein the research occurs; thus, these findings are specific to the JCU medical school, which has an undergraduate program with extensive rural community placements and a purposive selection process to choose values-aligned students and faculty. That said, SAHPE is becoming a more accepted philosophy of teaching medicine that would allow some generalizability of findings to other SAHPE institutions.

Conclusions

This study demonstrates that having a SAHPE curriculum, including a purposive selection strategy, deliberate teachings, extensive rural placements, and faculty role-modelling of socially accountable medicine across all undergraduate years, gives students and faculty a good understanding of what socially accountable medicine is, and shapes professional identity toward more socially accountable practice.

The arts serve multiple functions in the SALT-HE project. They generate a space to be expressive, allowing participants to articulate values, hopes, and frustrations that may be difficult to express verbally. They allow reflection, facilitating critical self-examination and meaning-making. They are dialogic, creating a shared space for dialogue across differences, and last, the arts are transformative, enabling shifts in perspective and fostering a sense of agency.

Overall, socially accountable medicine was perceived by students and faculty to encompass four key aspects:

- Receiving appropriate medical training/education to be a well-rounded doctor;
- Providing caring, patient-centred healthcare as a practitioner;
- Having a strong, fair, accessible and caring health system; and, lastly,
- Having a foundation or roadmap for how to be a more compassionate doctor capable of addressing health disparities and advocating for marginalized populations, with a vision of medicine that imagines a health system which optimizes patient health and well-being.

More specifically, a social accountability curriculum can assist students and faculty recognize the interconnectedness of health with the social determinants of health, which underpins the marginalization and inequity affecting many in local communities, and thus their access to healthcare.

Thus, SAHPE encompasses both a philosophical movement that students and faculty identify with, as well as teachings on how to be an appropriate doctor for working in regions with significant health disparities.

Declaration of Interest

The authors report no declarations of interest pertaining to this research.

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ENDNOTES

[1] “Off Center” is an artwork created with a needle-punching technique to echo the methodical process of weaving and circuitous motion. The dynamic nature of relationships within the pentagram is reflected in the intricacy, connectedness, and moving Venn circle designs. Both sides of a needle-punched work differ greatly—a reflection of how unsystematic, yet acceptable, reciprocal learning processes can look. The medical social accountability pentagram represents the collaboration of five key partners—policy makers, health professionals, academic institutions, health managers, and the community—collaborating to improve community health. The art design is overlaid with a disjointed pentagram, drawing attention to the ground where the people are more valued than the imposed organizer. More information.

[2] Ethical clearance at the JCU site was granted by the JCU HREC (number H8313), while the SALT-HE study overall had ethical Canadian approval through NOSM Universities (Lakehead University #1467908; Laurentian University #20201104).

Appendix A
Participant Information and Questions

Box 1: Participants

Workshop 1: Teaching and research academics from the medical school (n=4; 4F; 3/4 from ethnic, rural, and/or low socio-economic backgrounds).

Workshop 2: First-year medical students (n=8; 4M, 4F; 7/8 from ethnic, rural, and/or low socio-economic backgrounds).

Workshop 3: Final-year medical students (n=7; 3M, 4F; 5/7 from ethnic, rural, and/or low socio-economic backgrounds).

Workshop 4: Teaching and research academics from the medical school (n=7; 3M, 4F; 6/7 from ethnic, rural, and/or low socio-economic backgrounds).

Box 2: Interview Questions

Q1 Please describe what is happening in this representation.

Q2 What underlying personal values do you have that align in some way with the concept of socially accountable medical education/practice? (Prompts: social justice, environmental justice, human rights)

Q3 What people, experiences in your childhood or at university, or other things—such as the COVID pandemic—have influenced your perspectives of, or commitment to, socially accountable medical education/practice?

Q4 How does your perspective of social accountability affect your daily practice?

Q5 How do you feel about teaching/learning medicine in a School that aspires towards social accountable medical education/practice? (Prompt: has JCU shaped your understanding and attitudes to SA medical education/practise?)

Box 3: Questions for final catechization workshop (written responses for later discussion)

What images do you see that support the following key identified preliminary themes? Why?

(1) Receiving good and appropriate medical training/education

(2) Providing caring, patient-centred medical care

(3) Having a strong, fair, accessible and caring health system

(4) Foundation or road map to be a “good” doctor and a vision of future medical practice

Working alone, please complete the following.

Mimesis: In what ways do the artworks echo one another? What do you see in the various works that echo themes in your own artwork?

Antiphona: How do commonalities respond in chorus? Regarding all the commonalities, what new understandings are they telling us?

Aporia: Are ideas working against one another? Does anything puzzle you about the artworks in general? Do the artworks align with each other, or do they play against one another?

Appendix B

SALT-HE Catechizations; A Process to Question Systematically and Curiously

Guiding Discussion Prompts on the Art Creations

Mimesis: Is a reproduction or a mirroring.

- In what ways do the artworks echo one another?
- What do you see in the various works that echo themes in your artwork?

Poesis: Is a poetic moment, where the mimetic work comes to life through interpretation, dialogue, bearing witness, and reflection. The mimetic work provides the opportunity for an interaction, or an event, for the researcher and participants.

- What did you discover in making your artwork?
- What has changed in speaking together about the artworks now, compared to your individual experience?

Palimpsest: Is something that leaves a trace so that over time, whatever is below appears to seep through. There is a trace of what was below (an example is a painting that has been painted over). Palimpsest provides depth and layering. Another view is to consider how both the participant/researcher or student/teacher or researcher/researcher can be present at once.

- What are the under layers that are more complex beyond the surface of what has been made?

Sorites: Is a word for determining when a heap is a heap. If you have a handful of sand in your hand, you can say that is a heap of sand, but if you saw a big pile of dirt on a driveway, that is also a heap of sand. The heap is not based on amount; it just becomes a heap because we think it is. If we can think about how certain things became significant “heaps,” we might be able to discuss how we frame or value particular aspects of the phenomenon we are studying.

- What themes appear to be significant? Why?

Antiphona: Expands on intertextuality. The Greek term antiphona refers to “harmonies”. We might ask in this research, now that we have named some commonalities, how do they work together to teach us something new?

- How do commonalities respond in chorus?

Intertextuality: Refers to the relationships between texts. In this case, we might consider ideas across the artifacts, or between the researchers here.

- How do ideas and themes work together?

Appendix C
Summary Table of Themes

Key artwork themes around “What is socially accountable medicine”, including how they are depicted in JCU student and faculty artworks, and student and faculty experiences and knowledge underlying these concepts and depictions

What is socially accountable medicine to students and faculty?	How are concepts of socially accountable medicine depicted in the artworks?	What curriculum experiences and teachings inform concepts & depictions?
An inspirational philosophy		
● Experiencing a socially accountable curriculum with a school-wide organizational focus together with role-modelling from faculty and practising clinicians inspires students to be good, socially-accountable doctors, which, in turn, inspires them to inspire others to be more accountable.	● Flame, sun, candle (all in bright colours) depict how learning about socially accountable medicine from faculty and practising clinicians ignited their passion to be a good doctor and a desire to make positive changes.	● Extended rural placements with rural health professionals having a passion to help their rural and/or First Nations patients. ● lectures and practical sessions with faculty and placements with clinicians having a passion for teaching values-based medicine.
Non-clinical medical education and training		
● students given extensive, appropriate training to meet the health needs of the population they will serve ● students trained to ensure their healthcare practice is culturally safe and appropriate ● training involves diverse teachers (lecturers, patients, supervising doctors, community people) in diverse places (hospital, GP centre, rural communities) ● students are chosen not just on grades but on values and life experiences, creating a diverse and value-driven student cohort that reflects the populations of many local culturally-diverse communities ● producing socially accountable medical graduates requires a complex eco-system of student, faculty, societal and government inputs and supports (faculty perception)	● depictions of water-towers, human brain, fields of flowers—relating to the extensive medical training and knowledge required to become a good socially accountable doctor ● medical symbols (staff, scalpel, snake); often depicted using Aboriginal and Torres Strait Islander art motifs and symbols ● flames to represent the various experiences students have during training —sometimes enjoyable but sometimes intense or harsh ● the globe/world commonly often placed in the centre of the artwork to represent diversity of humanity, JCU students and patients are depicted by many-coloured stick-people, flowers, circles, jigsaw pieces ● trees are a common feature, particularly by faculty, representing a complex system of student, faculty, societal and government supports needed to establish a socially accountable medical school and “grow graduates”	● JCU has a 6-year program – providing extensive lectures, training and ward/community experiences on the clinical and non-clinical aspects of medicine (SDOH, Aboriginal and Torres Strait Islander health, etc.) ● classroom, practical, and placement training and experiences on providing culturally safe healthcare ● diverse hospital, GP and rural community placement experiences ● many JCU students come from a background of living closely with underserved populations before acceptance into medical school
Doctors provide patient-centred healthcare and advocacy		

● helping the patient is the most important aspect of being a socially accountable doctor ● doctors are willing to treat any patient, and treat all patients equally and with respect ● patients are treated with empathy, understanding, and caring to create a good doctor-patient relationship. ● doctors initiate changes or provide advocacy to empower patients and communities to improve health by overcoming personal or structural barriers. ● socially accountable graduate doctors work in underserved (often rural) areas with underserved (often Aboriginal and Torres Strait Islander) patients (Y1 students). ● socially accountable doctors focus on the many aspects required to provide care appropriate to each patients' needs (Y6 student perception).	● people (as patients) are the most common depiction in the centre of the artwork; representing patient-centred care, while hands were the second most common feature in the centre of artworks, depicting caring. ● treating any patient and treating patients equally is often depicted as eyes—patients are always watching what you do and say, with sometime closed eyes as some health professionals can see "wrong things" happening but "look away." ● empathy and understanding depicted as a doctor not on a pedestal (i.e., on same level as patients). ● developing a good doctor-patient relationship depicted by love-hearts, bright flowers, and written words describing all components necessary for good doctor-patient relationships. ● Y1 students have simple depictions involving rural aspects and typical underserved patients (First Nations), while Y6 students have more diverse/ complex artworks representing socially accountable healthcare.	● rural placements, where students meet real-world' doctors who are making a difference in local underserved communities and/or with disadvantaged patients, who care about their patients, and enjoy living in rural and/or underserved communities ● faculty being role-models of a practising socially accountable doctor
A strong health system as part of a just, caring, and sharing society		
● a strong, sustainable and flexible health system ● health system takes a caring and sharing/giving approach ● patients have fair access to good healthcare regardless of geography, ethnicity or wealth ● effective and efficient across all local communities - "everything in the health system works together seamlessly", with depictions that represent harmony and balance across underserved areas and populations ● delivered in consultation and collaborative partnership with communities ● awareness of the many barriers to providing good patient healthcare in underserved communities or with disadvantaged patients, and knowing how to make appropriate changes and provide advocacy when needed	● strong and sustainable health system—depicted by trees that are strong but flexible across different weather conditions (storm/rain, drought, lightning, snow), illustrating that it is strong but can adapt to conditions ● giving/caring/sharing for all—several depictions of Mother Teresa, love hearts; one or two hands—one helps others, one for looking after yourself; caring for the poor and powerless— representations of children and underserved using depictions of Aboriginal and Torres Strait Islander flags/colours, and people of all different colours (often linked together) ● fair access to care—the Earth to symbolize how socially accountable health system affects everyone, and depictions of different/different coloured people holding hands, as well as written words of issues such as institutionalized racism ● harmony—depicted by pastel colours; balance—by scales, yin-yang motif ● consultation—ears (listening) and yarning circles under a tree (First Nations concept) ● partnership/collaboration—handshake	● selection process seeks to preferentially choose students with beliefs in equality of people; social justice; gender equality; LGBTQIA rights; environmental justice, and giving back to the community / commitment to community service ● rural placements where students see many instances of poor doctor-patient interactions and institutional barriers resulting in poorer healthcare and reduced access to health services and resources for First Nations and other underserved patients

Appendix D
Final Catechization Session Plan

Part 1: 90 minutes

25: Introductions and Overview of SALT-HE
20: Participants write their own responses
20: Share in small group
25: Group discussion

Break – 15 min

Part 2: Group discussion; 60 minutes

The second part of the discussion will involve listing and then discussing potential underlying factors at the JCU medical school that students reported in the workshop interviews that provided them the knowledge, skills, and motivations to help them on their journey to becoming socially accountable health practitioners, including:

- medical school clubs, societies, or events with an altruistic mission that students/faculty are actively involved in (find out what students/faculty get most from actively participating in these altruistic events/clubs)
- (Y6 students only) the extended rural placements and diverse hospital rotations (specifically, identify what experiences on rural placements made a difference to students being more socially accountable as medical professionals, e.g., meeting doctors who care about their patients, enjoyed living rurally or remotely
- curriculum teachings that supported/informed students on how to be a more socially accountable medical professional (explore the impact of Cultural Immersion Day, Indigenous Liaison Officer workshops, various Aboriginal and Torres Strait Islander (ATSI) guest lecturers/speakers, institutionalized racism & cultural safety talks, ATSI community protocols, etc.)
- med school faculty helping/inspiring students
- JCU medical school's young and multi-cultural student cohort (explore if the concepts and attitudes towards socially-accountable medical practice are embraced by the many in the JCU medical student cohorts because of this)