

Art, meditation and cognitive science: a framework for museum-based community meditation programme during the COVID-19 pandemic in Singapore

Russell Weili Chan, Sharon Peiling Chen & Dee Yu Teng Chia

To cite this article: Russell Weili Chan, Sharon Peiling Chen & Dee Yu Teng Chia (20 Nov 2023): Art, meditation and cognitive science: a framework for museum-based community meditation programme during the COVID-19 pandemic in Singapore, Arts & Health, DOI: [10.1080/17533015.2023.2281911](https://doi.org/10.1080/17533015.2023.2281911)

To link to this article: <https://doi.org/10.1080/17533015.2023.2281911>



© 2023 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group.



Published online: 20 Nov 2023.



Submit your article to this journal [↗](#)






View related articles [↗](#)



View Crossmark data [↗](#)

Art, meditation and cognitive science: a framework for museum-based community meditation programme during the COVID-19 pandemic in Singapore

Russell Weili Chan ^a, Sharon Peiling Chen ^b and Dee Yu Teng Chia ^c

^aBehavioural, Management and Social Sciences, Department of Learning, Data analytics and Technology, Section Cognition, Data and Education, University of Twente, Enschede, the Netherlands; ^bAccessibility Programmes, Singapore Art Museum, Singapore, Singapore; ^cDepartment of Sociology, University of Cambridge, Cambridge, UK

ABSTRACT

In 2020, the COVID-19 pandemic caused mandatory lockdowns worldwide, exacerbating mental health issues created by social isolation. Aimed to improve mental health and maintain engagement, the Singapore Art Museum (SAM) rapidly deployed an online programme called Unwind with SAM to engage the public with the museum's contemporary art collection coupled with meditation. The programme focused on the positive effect of arts on mental health, combined with the cognitive benefits of meditation by 'slow-looking' at artworks. This practice-based report reflects on the processes and explores the potential between art, contemplation and cognitive sciences. The first section outlines the current landscape of art and wellness approaches in museums. The second section explains the philosophical framework that guides the programme, alongside a breakdown of components and design rationale. The final part provides a critical reflection and concludes with recommendations for practitioners, managers and scientists to utilise the framework for designing future programmes.

ARTICLE HISTORY



Received 28 February 2023
Accepted 6 November 2023

KEYWORDS

Mindfulness; Neuroscience;
COVID-19; wellness;
contemporary art

Introduction

The COVID-19 lockdowns worldwide in 2020 brought about mass isolation, loneliness and societal disconnect due to the uncertainty of the impact of the Pandemic and its regulatory implications on global citizens. Singapore was not an exception, but due to its geographical location and limited land mass, the local populace felt these effects more acutely because they were unable to travel freely. It is established that social isolation increases the likelihood of physical and mental health issues and creates long-term societal and health system concerns (Hwang et al., 2020; Vickhoff, 2023). To counteract these societal concerns, museums began offering interactive and participatory group activities, and in the United Kingdom,

CONTACT Russell Weili Chan  r.w.chan@utwente.nl  Behavioural, Management and Social Sciences, Department of Learning, Data analytics and Technology, Section Cognition, Data and Education, University of Twente, Enschede, the Netherlands

© 2023 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group.

This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0/>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited. The terms on which this article has been published allow the posting of the Accepted Manuscript in a repository by the author(s) or with their consent.

museums are partners in a consortium that drives health and social services initiatives (Beauchet et al., 2020; Clift et al., 2009). Participatory group activities, such as those having art therapeutic effects, have been demonstrated to promote well-being in the general population (Beauchet et al., 2020; Camic & Chatterjee, 2013). The World Health Organization (WHO) has also prioritised arts-based health interventions as a therapy and a preventative approach (World Health Organization, 2021). Therefore, exploring approaches to engage the public in health and wellness-based art interventions meaningfully is important and essential.

Incorporating some type of mindfulness or meditation practice as a supplement to the art experience is one of the increasingly common ways in which museums have begun to include wellness into their art programming. For instance, the mindfulness programme at the Rubin Museum, which has been conducted and led by renowned meditation teachers such as Sharon Salzberg (Fox, 2020) since 2015 (see [Soundcloud: Mindfulness Meditation Podcast](#)), focuses on specific Buddhist artwork in conjunction with talks and podcasts, that introduce various wellness topics like Tibetan medicine. Another is Tate Liverpool, which implemented a programme based on the scientific framework of the Liverpool Mindfulness Model (Malinowski, 2013) and intended to enable museum visitors to appreciate art differently by utilising mindfulness techniques (Tate, 2018). Other contemporary institutions, such as the Van Gogh Museum in Amsterdam, launched a mental health programme called “Open Up with Vincent” in 2022 that included activities such as mindful art viewing and online meditation videos (Van Gogh Museum, 2022). Given that some of these programmes have been implemented for an extended period, there is a dearth of formal discourse on the programme design processes/factors, evaluation of these programmes, and publications that describe their engagement, which is urgently needed.

In May 2020, at the height of the lockdowns, the authors collaborated with the Singapore Art Museum (SAM) to develop a programme that combines art appreciation with meditation to improve well-being and help individuals cope with COVID-19 lockdown conditions. To fulfil the above, the primary activity consisted of a progressive shared virtual experience, appreciation of artworks from the museum’s contemporary art collection, and a meditation programme that supported their mental well-being through self-reflection between the art piece and their emotions. It was envisioned that by engaging in the weekly programme, participants would be able to participate in meditation as a contemplative practice, connect with others, learn more about the science behind meditation, and consolidate some of the cognitive and mental well-being benefits of meditation (Chan, 2018; Chan et al., 2017; Zeidan et al., 2010). Due to the multicultural society in Singapore, the programme was to be secular; in this way, it would address one of the minor drawbacks of the Rubin programme, which was heavily dependent on their Asian art collection, which included numerous Buddhist art items. Due to peoples’ varying arts and health literacy (Tan et al., 2021), the envisioned programme also needed to be contextually appropriate mainly for Singaporeans (i.e. local artist focus) and made freely available to the public to avoid a paywall scenario. After establishing these parameters, the next step was to design an overarching framework based on the various themes and incorporate overlapping evidence supporting the themes.

Overarching framework and accessibility

The first step was to establish and define an end goal for the peak experience of the programme, which was conceived by the authors and the executive team at SAM to inculcate a “self-experience” of contemplation (through a meditation practice), combined with a uniquely Singaporean art experience (drawn from the museum’s learning collection) that was more holistic than either of the parts on their own. This initial phase was essential because the programme consisted of numerous components and activities, yet a unified experience was crucial to what was envisioned for the participants.

The programme was not intended to be a one-time experience but rather a programme to educate participants over time. Few arts and wellness programmes (except those with larger budgets) offer additional educational opportunities to explain the science underlying the unique experiences (Chung Yeo et al., 2007; Van Lith, 2015). For instance, the cognitive, mental health, and well-being benefits of meditation (Behan, 2020; Chan et al., 2018; Immink et al., 2017; Lomas et al., 2018) are rarely discussed in detail with participants; nonetheless, this was a central goal of this programme. It was essential to educate the audience in an applied and multi-disciplinary manner about the mechanics underlying art and meditation. The meditation practice serves as a guided method for enhancing art and meditation concepts such as “slow-looking” (Terry, 2023; Tishman, 2017), flow-states, and contemplation to improve the self-experience. To achieve these requirements, a foundational framework for the programme’s various components/activities was developed (see Figure 1).

Art provides a form of contemplation (Echarri & Urpi, 2018), which overlaps with several aims in meditation practice, such as self-inquiry, insight, and meta-awareness (Dahl et al., 2015). Therefore, there is quite a natural overlap between both elements of art and meditation. However, the inclusion of cognitive sciences as a third element helped explain the experiential phenomena across art and meditation, such that these educational activities enhanced the experience of either art or meditation alone or combined. The centrepiece of the framework is an individual’s self-experience, which guides the main objective, goals and methodology that the programme was delivered. One could therefore plan activities around that experience and design ways to increase connectedness between each separate element or across all the elements at once (covered in detail in the next section). Additionally, an individual’s self-experience means that the programme explicitly did not aim to “control” the phenomenological experience of a participant. However, some effects after participation in contemplative practices like meditation may occur similarly across participants. For example, it would be typical for some participants to find changes to their attentional function, like noticing different aspects of the artwork, including colour or shapes. Changes in breathing patterns (faster or slower) may also arise alongside the awareness of these changes. More subtle effects like emotional responses to the artwork linked to memories or changes in time perception could also occur (Berkovich-Ohana et al., 2020; Bornemann et al., 2015). We also anticipated that an artwork’s usual gaze time (Smith & Smith, 2001; Smith et al., 2017) would change without conscious effort, perhaps due to an increase in slow-looking activity.

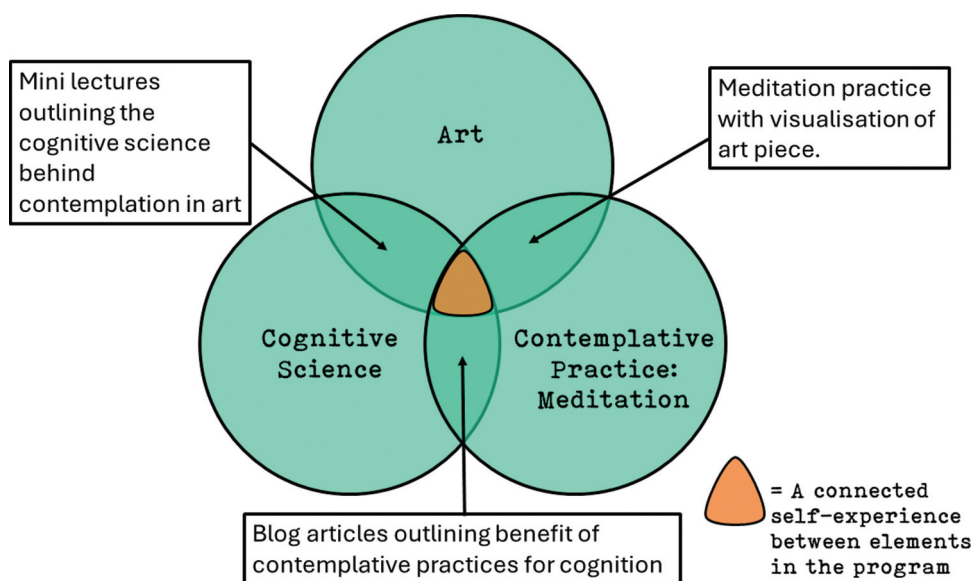


Figure 1. The centrepiece of the framework for the programme was the self-experience of art enhanced by the understanding of cognitive sciences and guided by a structured contemplative practice – meditation. This consisted of a once-a-week online live-streamed session (for 7 weeks) hosted by the museum combined with an appreciation of an art piece from the museum’s contemporary art collection. The goal was to have an opportunity to progressively explore different artistic themes and concurrently provide personal space for participants to engage in a cohesive and connected contemplative self-experience. Once the framework was established, the overlapping areas between elements provided opportunities for public engagement in other activities that supported that self-experience. For example, emphasis was placed on the educational aspect of the cognitive mechanisms across art and meditation.

Methodology: breakdown of activities in the programme and design considerations

This section aims to provide a more detailed breakdown of the activities carried out for readers, stakeholders and art programme managers to replicate and utilise these design aspects for future programmes with other organisations and contexts.

Ethical statement and declarations

This is a practice-based report, and the information gathered here is solely based on the authors’ reflections on the planning and execution of the programme. Due to its observational and reflective nature, no ethical approval was required. *No data was collected* on the participants of the programme as it was not an experiment. The practice report is aimed at helping readers understand the considerations of designing a community-based art and meditation programme. Therefore, evidence-based standards on Complementary and Alternative Medicine are also *not applicable*.

Live meditation and art appreciation public sessions (online)

Before the programme started, two experienced meditation facilitators, Cheryl Tan ([Breathe Movement](#)) and Dr. Russell Chan (the corresponding author), were invited to give trial sessions of the live sessions to SAM staff members. The trial sessions were conducted for between 13–15 staff members. These sessions provided critical feedback to the facilitators before public delivery for aspects such as delivery style, mannerisms, language (inclusiveness), themes, artwork choice and general instructing. Some of the staff were meditation practitioners and could discern if the instructions were appropriate for the public and followed the programme's goals. These pre-sessions were significant for both facilitators as it helped them to refine their sessions.

The programme then started with weekly online public sessions held between 20th May – 8th July 2020 during the COVID-19 lockdowns and lasted between 35 to 50 minutes for every session - seven were conducted in total. As shown in [Figure 1](#), the critical engagement activity was the weekly live meditation programme, which allowed for the development of the self-experience. Cheryl Tan facilitated the first three sessions with mindfulness meditation as the primary technique. The subsequent four sessions were facilitated by Dr. Russell Chan and utilised yoga nidra meditation (Chan et al., [2017](#), [2020](#)). All sessions generally followed this format:

Stage 1 A general introduction of new meditation concepts that is chosen by the teacher (e.g. explanation of setting personal intention, body rotations, imprints, attention, visualisation, adoption of different postures, etc.) for the week (5 minutes);

Stage 2 An art piece chosen by the session facilitator associated with a different weekly theme to help them explore/become aware of their feelings during the lockdown period (loneliness, trust, solidarity, camaraderie, etc.) through the process of slow-looking. We anticipated that participants would adopt slow-looking to view the art piece alongside a more intuitive experience;

Stage 3 The meditation practice – Cheryl Tan taught a 20-minute mindfulness session, and Dr. Russell Chan taught a 30-minute yoga nidra meditation. Both are considered as secular methods of focused-attention meditation;

Stage 4 A closing discussion lasting about 5–10 min where participants could ask any questions about the entire session.

The critical aspect of these live programmes was the period allocated to contemplate the art piece at Stage 2. At Stage 3, during the meditation practice, both meditation facilitators utilised guided visualisations to reintroduce the earlier subject of contemplation (i.e. art piece, feelings, theme), which provided an opportunity for participants to train their attentional focus. At the same time, this also reinforced the programme's central goal – a subjective experience (as each person would gravitate towards different aspects of the art piece and were free to explore arising feelings and sensations). Although the sessions were mainly didactic, after the first week, returning participants were encouraged to ask any questions at the opening introduction (Stage 1) and at the end during the closing discussion (Stage 4). SAM staff members (about 3–4 of them) and the mindfulness facilitators were online to answer questions about the chosen artworks and the mindfulness techniques.

The links to each week's Facebook Live and YouTube sessions are freely and publicly accessible and outlined in [Table 1](#). Participants who took part in the sessions on Facebook

Table 1. Overall outline of the “Unwind with Singapore Art Museum” programme and online links conducted during the COVID-19 pandemic.

Live Sessions	Session 1 (20/05/20)	Session 2 (27/05/20)	Session 3 (03/06/20)	Session 4 (17/06/20)	Session 5 (24/06/20)	Session 6 (01/07/20)	Session 7 (08/07/20)
Theme	We Are Family - Diversity of Cultures	The Hidden Dimension II - Solitude	Singapore - Quiet beauty	Another Woman - Connectedness	Army Boys - Camaraderie	Aunties & Uncles - Deconstructing Stereotypes and Communities	Mamashop - Cultivating Your Inner Strength
Artworks	https://artsandculture.google.com/asset/we-are-family-vice-nite-delgado/xQEde_Bis905UA?hl=en	http://www.sarahchoojing.com/pf/hd.html	https://www.roots.gov.sg/Collection-Landing/listing/1321336	https://www.roots.gov.sg/Collection-Landing/listing/1035834	https://www.roots.gov.sg/Collection-Landing/listing/1324988	https://www.roots.gov.sg/Collection-Landing/listing/1320972	https://www.roots.gov.sg/Collection-Landing/listing/1321414
Facebook Live link	https://www.facebook.com/watch/live/?ref=watch_permalink&v=656655641843864	https://www.facebook.com/singaporeartmuseum/videos/242851846975957/	https://www.facebook.com/singaporeartmuseum/videos/2600254986905527/	https://www.facebook.com/singaporeartmuseum/videos/726055434872590/	https://www.facebook.com/singaporeartmuseum/videos/320232758988720	https://www.facebook.com/singaporeartmuseum/videos/1148581002190938	https://www.facebook.com/singaporeartmuseum/videos/822003534996228
YouTube link	https://youtu.be/1rwOzFo64-l7sj=FLcT5FHJbLlNUw6	https://youtu.be/GXD_M5fom5o	https://youtu.be/lZ7x-KOrmf0	https://youtu.be/Jlb-CiCY9_s7si=OmeGPlCM2rdvQIGC	https://youtu.be/V4wk77Xp27Y	https://youtu.be/aN_gYJuAqWc	https://youtu.be/Hf04hAd-FVE3s=A5TdGG6H9FNCSPJWn
Blog	Article 1 (01/07/20)	Article 2 (20/07/20)	Article 3 (19/02/21)	Article 4 (07/04/21)			
Title	The Art and Science of Meditation	Meditation and the Control of Attention in Art	Meditation and the Cultivation of Creativity in Art	Meditation and Art Therapy Wellness Benefits			
Direct link	https://www.singaporeartmuseum.sg/about/blog/the-art-and-science-of-meditation	https://www.singaporeartmuseum.sg/about/blog/meditation-and-the-control-of-attention-in-art	https://www.singaporeartmuseum.sg/about/blog/meditation-and-the-cultivation-of-creativity-in-art	https://www.singaporeartmuseum.sg/about/blog/meditation-and-art-therapy-wellness-benefits			
Mini-lectures	Lecture 1 (21/08/21)	Lecture 2 (06/10/21)	Lecture 3 (06/10/21)	Lecture 4 (06/10/21)			
YouTube link	https://youtu.be/NnXWxb3AZ3A	https://youtu.be/hjF304vYylg	https://youtu.be/xq_jXGaEypw	https://youtu.be/0ros65Wg9E4			

Live were told that their engagement was strictly voluntary alongside any comments they chose to share, which followed the privacy rules of the platform. In addition, by participating, they acknowledged that the session was being recorded and that the associated videos would be curated on different social media platforms.

Mini educational online lectures and associated blog articles

To further support the live sessions with additional educational content, four 10-minute mini-lectures and four short blog posts were also produced. These educational exercises were designed to reinforce the experiential processes of the live sessions by explicating the benefits and cognitive mechanisms underlying meditation and art appreciation. These articles provided more detail on theoretical frameworks on how meditation acts as a form of attentional training and, in turn, alters one's experience of art. In addition, the mental health benefits of this interaction were also covered. All the online lectures and blog article links can also be found in [Table 1](#). These blog articles and video lectures were published between 1st July 2020 and 7th April 2021 during COVID-19. The specific topics and goals of these talks and blog articles related to the different concepts are further explained below.

The art and science of meditation

In the first blog article, the main topic was to explain the mechanism of cognitive control, in which mind-wandering is one part of several cyclical mental processes like disengagement, conscious attentional shifting, and sustainment of attention (Malinowski, 2013). This aimed to clarify the understanding of what was happening to the brain and mind during meditation when using attention. The topic of "flow state" was briefly mentioned (Koehn & Morris, 2012), and the article explained how attentional control improvements were possible through the practice of focused-attention style meditation (FAM) (Tang et al., 2015). In the art piece by contemporary Singapore artist Amanda Heng (RootsSG, 1996), *Another Woman*, Heng chose to involve her mother in the creation of it, with the thinking that the process would provide opportunities for communication and connection between them. The blog also had a link for participants to experience the associated live session with FAM. The artwork was selected as it was envisioned that the art and meditation session could be an activity where family members could bond and contemplate through art. The "reconnection" theme also intended to inspire optimism that individuals will soon be able to reunite with their loved ones once lockdown restrictions were lifted.

Meditation and the control of attention in art

This second blog post extended the discussion of the cognitive function of attention. For instance, how focalisation enabled attention to function as a zoom aperture lens that prioritises goal-relevant information dependent on any engaged task (Lutz et al., 2015). The beneficial effects of meditation, even when mindfulness was practiced just once in a person's life, were described (Chan, 2018; Chan et al., 2017, 2018). This was intended to encourage individuals who were new to meditation to practice it as an attentional task. The featured art piece in this article was *Army Boys* (RootsSG, 2006) by Jing Quek. The art piece was part of a series where ordinary people and common everyday situations and

environments in Singapore were stylised like celebrities. In context, conscription in Singapore is a rite of passage for all males, and typically, strong friendships and camaraderie are formed during the 2.5 years together. During the lockdown, many national servicemen were redeployed to the healthcare sector to contain the spread of COVID-19. The art and meditation activity focused on teamwork and appreciating the people we met in our lives, along with the concept of “camaraderie” and a link for participants to enjoy the corresponding live session. The “camaraderie” theme was intended to make the people understand that it was essential to encourage one another at this challenging time and that they were not alone in their difficulties and mental states.

Meditation and the cultivation of creativity in art

The third blog article introduced a different meditation style called “Open Monitoring Meditation” (OMM). It intended to explain that OMM may induce mental states that could enhance insight and lead to inventive problem-solving. Creativity in art is frequently seen as a trait skill; however, it was argued that OMM might provide a more formalised approach to induce internal states that could stimulate creative solutions. The mechanism of OMM was explained, and this was driven through the cultivation of greater awareness towards sensory processes in a non-judgemental manner, leading to states of mental silence that are conducive for the development of divergent thinking (Hommel & Colzato, 2017). *Aunties & Uncles* (RootsSG, 2009) by Jing Quek reintroduced the themes of “deconstructing stereotypes” and “non-judgment,” which aimed to raise awareness of self-judgment and why it is often a reflection of our own judgemental views toward others.

Meditation and art therapy wellness benefits

The fourth and last blog post described the function of art therapy and how its processes and outcomes intersect with those of meditation. Art therapy and meditation, for instance, both foster self-reflection, may facilitate flow states, give a set of tools that aid in improving mental health and are solid practices that one could rely on throughout life. *Mamashop* (RootsSG, 2012), the artwork by Dawn Ng used during the final live session, reintroduced the concept of “self-reflection.” During the live sessions, it was explained that our externalised yearnings for the traits of others (e.g. “I wish I were more patient”) often reflect innate qualities that require cultivation and development following self-reflection.

Discussion

This reflective practice-based report’s primary objective was to outline the content and thought processes of a community meditation programme developed in conjunction with a Singaporean art museum to address social isolation and mental health issues during COVID-19 lockdowns. It began with in-depth conversations with the stakeholders to clearly define the program’s objectives and agreed-upon outcomes. Once these general organisational objectives were identified, the authors had a considerable measure of latitude to create the programme’s framework and specific activities. The primary objectives were to enhance participants’ experience of an artwork (through guided virtual appreciation) and to develop their attentional skills via meditation. The programme was supported with blog articles and online mini-lectures on cognitive science concepts to

further explain how art and meditation mechanisms complemented one another. The following provides a critical reflection of the framework and concludes with recommendations for other museum practitioners, wellness practitioners, managers and scientists to utilise the framework for designing future programmes with diverse organisations across contexts.

Programme adaptation and replication

It was not possible to properly evaluate the success of the programme as no behavioural measures were collected. Nevertheless, based on the commentary received during and after the live programme, as well as the number of online engagements (over 133,000 views across Facebook Live and YouTube) and overseas visitors, it can be concluded that stakeholders were reasonably satisfied with the outcome. The authors agreed that it is essential to share this programme's design, thought process and background for others to adopt and replicate so that other communities may benefit from the documentation. While in most parts of the world, COVID-19 has eased, the likelihood of future pandemics is unpredictable and future lockdowns may be implemented. This would continue to isolate communities; therefore, this practice-based report serves as a guide to designing such programmes. The approach took a much more practical approach (partly due to time constraints) rather than a long drawn-out planning process to establish efficacy for a broader societal approach. There is no right or wrong and readers are encouraged to copy, adapt and/or replicate with other stakeholders to achieve similar or better results.

Critical reflection of the programme

From the authors' perspectives, one of the initial reflections was the relatively low level of community consultation of the programme (due primarily to the urgency of the short operating time frame required to roll out the programme) compared to a community bottom-up approach or more balanced approach compared to other museum initiatives (Jensen, 2013). For instance, the majority of choices about the actual direction of the programme were made at the executive level in consultation with the corresponding author, trialled once with internal staff members for feedback and subsequently released to the public. The programme might have been more bottom-up focused, emphasising grassroots proposals to establish stronger community partnerships for social sustainability (Panda, 2007). Another option is to adopt a balanced approach in which projects are more permanent (e.g. annually and less ad hoc), input is requested, and the programme is revised using formalised processes in subsequent iterations. This depends on funding and other organisational constraints (programme planning) that may not be immediately apparent.

The duration and timing of future programmes is another factor to consider. Other community-based programmes that utilised participatory art activities to mitigate the impacts of loneliness during the COVID-19 epidemic showed efficacy following the end of a 3-month, weekly participation programme in virtual activities associated with art museums (Beauchet et al., 2022). The current programme only comprised of 7-weeks and had two different teachers (i.e. potential issues of consistency and teaching style) and could be considered less progressive in comparison. Specifically for mindfulness, considerable debate exists on how much practice is needed to induce noticeable beneficial

effects for well-being and health (Luken & Sammons, 2016). In terms of timing, the overall implementation of the programme could have been more aligned with the release of other educational activities, like the online lectures and blog articles, that were a bit disjointed. The publication of these associated activities was occasionally given lower priority than other museum news, resulting in new educational material being issued at irregular intervals, which was suboptimal for continuity and engagement with the general public.

This leads to the third reflection that the current programme did not capture any behavioural, self-report measures or surveys to understand changes/effectiveness from the current programme (Schonert-Reichl & Roeser, 2016). The programme had a general goal to alleviate loneliness and mental health issues, but without formal measures, it is hard to understand its impact. Any positive effects of the programme were mostly anecdotal (e.g. based on comments from the social media platforms) and also assumed from other similar programmes in this space that involved participatory interaction with art for social isolation (Beauchet et al., 2022). Moving forward, the authors recommend implementing earlier planning with a formalised research programme (partnership with a university/research institute) utilising specified health and well-being metrics. With more lead-up time, participants in the program could be invited to participate in research involving mixed methodologies, like combining behavioural measures with pre-post surveys and short interviews for thematic analysis. This could be very insightful to understand the participants' motivations, experience levels and effects of the programme to derive a deeper understanding of effectiveness for future iterations and improvements. In this case, where the public was involved, it would be challenging to implement typical gold-standard comparison groups for the mindfulness practice, but utilising a wait-listed group design could be appropriate (Davidson & Kaszniak, 2015).

Privacy was another issue that required a delicate balance with engagement. Since SAM already had a relatively engaged following on Facebook, Facebook Live was the chosen platform that would result in the highest level of engagement. We reiterate that participants were aware when they took part and acknowledged that the information they shared was voluntary and that the data was publicly available on the platform. However, because the programme did not have ethical approval, it was difficult to report on the audience's age groups, ethnicity, or other socioeconomic attributes. Knowledge about the audience was solely based on what they chose to reveal about themselves, e.g. participants were international – from the United Kingdom, Australia and the United States of America (despite time zone differences). Some participants revealed that they were long-term practitioners in meditation and curious about the combination with art and that some others took part with their families.

Related to the topic of research, one of the most significant aspects of public engagement during the COVID-19 pandemic may be the effect of mediated encounters; in this case, the impact of mediated mindfulness practice using slow art delivered via a digital platform. Studies have been conducted on mediated learning experiences (Keng et al., 2022; Okoye et al., 2021) and mediated meditation (Oliveira et al., 2021), but none have been published on mediated meditation through slow looking during the Pandemic. It was a missed opportunity to formally document such a practice during the Pandemic due to the lack of behavioural data collection and data collection on audience perceptions of the mediated experience collected by the programme.

Future directions and research

With the lifting of lockdown restrictions and accommodations to new norms, there is considerable opportunity for future interdisciplinary research between diverse constructs such as art and meditation. At the basic science level, research on aesthetic art judgement and cortical dynamics (Kontson et al., 2015) could leverage on more recent work of cortical dynamics from meditation (Lee et al., 2018) to outline parallels and predictions of shared cognitive processes. This could lead to the understanding of mechanisms for creativity and art appreciation. At a broader mental health and wellness level, further investigations combining art therapy (Hacmun et al., 2018) with adjunct meditation programmes could lead to understanding if there are increased positive effects. Due to the diversity of personality types, individualisation of programmes is also a vital future trend for maximising cognitive, health, and well-being outcomes in the general population. In conclusion, more interdisciplinary programmes incorporating art and formal research objectives would serve to provide more evidence for the health and well-being of society in multiple ways.

Acknowledgments

We wish to thank all Singapore Art Museum staff members – especially Maria Tang and Nurul Kaiyisah for their help and coordination. They worked tirelessly during a challenging period to help organise and coordinate most components of the programme.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Funding

This project did not receive any external funding.

ORCID

Russell Weili Chan  <http://orcid.org/0000-0002-3512-2337>

Sharon Peiling Chen  <http://orcid.org/0000-0002-8936-5713>

Dee Yu Teng Chia  <http://orcid.org/0000-0002-4976-0671>

References

- Beauchet, O., Bastien, T., Mittelman, M., Hayashi, Y., & Hau Yan Ho, A. (2020). Participatory art-based activity, community-dwelling older adults and changes in health condition: Results from a pre-post intervention, single-arm, prospective and longitudinal study. *Maturitas*, 134, 8–14. <https://doi.org/10.1016/j.maturitas.2020.01.006>
- Beauchet, O., Matskiv, J., Galery, K., Goossens, L., Lafontaine, C., & Sawchuk, K. (2022). Benefits of a 3-month cycle of weekly virtual museum tours in community dwelling older adults: Results of a randomized controlled trial [original research]. *Frontiers in Medicine*, 9, 9. <https://doi.org/10.3389/fmed.2022.969122>

- Behan, C. (2020). The benefits of meditation and mindfulness practices during times of crisis such as COVID-19. *Irish Journal of Psychological Medicine*, 37(4), 256–258. <https://doi.org/10.1017/ipm.2020.38>
- Berkovich-Ohana, A., Dor-Ziderman, Y., Trautwein, F.-M., Schweitzer, Y., Nave, O., Fulder, S., & Ataria, Y. (2020). The Hitchhiker's guide to neurophenomenology – the case of studying self boundaries with meditators [hypothesis and theory]. *Frontiers in Psychology*, 11(1680). <https://doi.org/10.3389/fpsyg.2020.01680>
- Bornemann, B., Herbert, B. M., Mehling, W. E., & Singer, T. (2015). Differential changes in self-reported aspects of interoceptive awareness through 3 months of contemplative training [original research]. *Frontiers in Psychology*, 5(1504). <https://doi.org/10.3389/fpsyg.2014.01504>
- Camic, P. M., & Chatterjee, H. J. (2013). Museums and art galleries as partners for public health interventions. *Perspectives in Public Health*, 133(1), 66–71. <https://doi.org/10.1177/1757913912468523>
- Chan, R. W. (2018). *From stillness to action : meditation-based enhancement of cognitive control processes underlying motor sequence learning* [Thesis (PhD(Human Movement))]. University of South Australia. https://find.library.unisa.edu.au/primo-explore/fulldisplay?vid=UNISA&search_scope=All_Resources&docid=UNISA_ALMA11167039940001831
- Chan, R. W., Alday, P. M., Zou-Williams, L., Lushington, K., Schlesewsky, M., Bornkessel-Schlesewsky, I., & Immink, M. A. (2020). Focused-attention meditation increases cognitive control during motor sequence performance: Evidence from the N2 cortical evoked potential. *Behavioural Brain Research*, 384, 112536. <https://doi.org/10.1016/j.bbr.2020.112536>
- Chan, R. W., Immink, M. A., & Lushington, K. (2017). The influence of focused-attention meditation states on the cognitive control of sequence learning. *Consciousness and Cognition*, 55, 11–25. <https://doi.org/10.1016/j.concog.2017.07.004>
- Chan, R. W., Lushington, K., & Immink, M. A. (2018). States of focused attention and sequential action: A comparison of single session meditation and computerised attention task influences on top-down control during sequence learning. *Acta Psychologica*, 191, 87–100. <https://doi.org/10.1016/j.actpsy.2018.09.003>
- Chung Yeo, J., Hyun Ju, C., & Na Yung, K. (2007). The evaluation of cultural arts healing project for cultural arts education and its development plan [the evaluation of cultural arts healing project for cultural arts Education and its development plan]. *Art Education Research Review*, 21(1), 265–288. <https://www.kci.go.kr/kciportal/ci/sereArticleSearch/ciSereArtiView.kci?sereArticleSearchBean.artid=ART001051213>
- Clift, S., Camic, M., Chapman, P., Clayton, B., Daykin, G., Eades, N., Parkinson, G., Secker, C., Stickley, J. T., & White, M. (2009). The state of arts and health in England. *Arts & Health*, 1(1), 6–35. <https://doi.org/10.1080/17533010802528017>
- Dahl, C. J., Lutz, A., & Davidson, R. J. (2015). Reconstructing and deconstructing the self: Cognitive mechanisms in meditation practice. *Trends in Cognitive Sciences*, 19(9), 515–523. <https://doi.org/10.1016/j.tics.2015.07.001>
- Davidson, R. J., & Kaszniak, A. W. (2015). Conceptual and methodological issues in research on mindfulness and meditation. *The American Psychologist*, 70(7), 581–592. <https://doi.org/10.1037/a0039512>
- Echarri, F., & Urpi, C. (2018). Mindfulness in art contemplation. The story of a Rothko experience. *The Journal of Museum Education*, 43(1), 35–46. <https://doi.org/10.1080/10598650.2017.1384977>
- Fox, A. (2020). *Unwind with these free, museum-led meditation and mindfulness sessions*. Smithsonian Magazine. <https://www.smithsonianmag.com/smart-news/unwind-with-free-museum-meditation-mindfulness-sessions-180974715/>
- Hacmun, I., Regev, D., & Salomon, R. (2018). The principles of art therapy in virtual reality. *Frontiers in Psychology*, 9, 2082. <https://doi.org/10.3389/fpsyg.2018.02082>
- Hommel, B., & Colzato, L. S. (2017). Meditation and Metacontrol [journal article]. *Journal of Cognitive Enhancement*, 1(2), 115–121. <https://doi.org/10.1007/s41465-017-0017-4>
- Hwang, T. J., Rabheru, K., Peisah, C., Reichman, W., & Ikeda, M. (2020). Loneliness and social isolation during the COVID-19 pandemic. *International Psychogeriatrics / IPA*, 32(10), 1217–1220. <https://doi.org/10.1017/s1041610220000988>

- Immink, M. A., Colzato, L. S., Stolte, M., & Hommel, B. (2017). Sequence learning Enhancement following single-session meditation is dependent on metacontrol mode and experienced effort [journal article]. *Journal of Cognitive Enhancement*, 1(2), 127–140. <https://doi.org/10.1007/s41465-017-0019-2>
- Jensen, A. (2013). Beyond the borders: The use of art participation for the promotion of health and well-being in Britain and Denmark. *Arts & Health*, 5(3), 204–215. <https://doi.org/10.1080/17533015.2013.817448>
- Keng, S. L., Chin, J. W. E., Mammadova, M., & Teo, I. (2022). Effects of mobile app-based mindfulness practice on healthcare workers: A randomized active controlled trial. *Mindfulness (N Y)*, 13(11), 2691–2704. <https://doi.org/10.1007/s12671-022-01975-8>
- Koehn, S., & Morris, T. (2012). The relationship between performance and flow state in tennis competition. *The Journal of Sports Medicine and Physical Fitness*, 52(4), 437–447.
- Kontson, K., Megjhani, M., Brantley, J., Cruz-Garza, J., Nakagome, S., Robleto, D., White, M., Civillico, E., & Contreras-Vidal, J. (2015). ‘Your brain on art’: Emergent cortical dynamics during aesthetic experiences [original research]. *Frontiers in Human Neuroscience*, 9, 9. <https://doi.org/10.3389/fnhum.2015.00626>
- Lee, D. J., Kulubya, E., Goldin, P., Goodarzi, A., & Girgis, F. (2018). Review of the neural oscillations underlying meditation. *Frontiers in Neuroscience*, 12, 178. <https://doi.org/10.3389/fnins.2018.00178>
- Lomas, T., Medina, J. C., Ivtzan, I., Rupprecht, S., & Eiroa-Orosa, F. J. (2018). A systematic review of the impact of mindfulness on the well-being of healthcare professionals. *Journal of Clinical Psychology*, 74(3), 319–355. <https://doi.org/10.1002/jclp.22515>
- Luken, M., & Sammons, A. (2016). Systematic Review of mindfulness practice for reducing job burnout. *The American Journal of Occupational Therapy: Official Publication of the American Occupational Therapy Association*, 70(2), p70022500207002250021–p70022500207002250010. <https://doi.org/10.5014/ajot.2016.016956>
- Lutz, A., Jha, A. P., Dunne, J. D., & Saron, C. D. (2015). Investigating the phenomenological matrix of mindfulness-related practices from a neurocognitive perspective. *American Psychologist*, 70(7), 632–658. <https://doi.org/10.1037/a0039585>
- Malinowski, P. (2013). Neural mechanisms of attentional control in mindfulness meditation. *Frontiers in Neuroscience*, 7, 8. <https://doi.org/10.3389/fnins.2013.00008>
- Okoye, K., Rodriguez-Tort, J. A., Escamilla, J., & Hosseini, S. (2021). Technology-mediated teaching and learning process: A conceptual study of educators’ response amidst the covid-19 pandemic. *Education and Information Technologies*, 26(6), 7225–7257. <https://doi.org/10.1007/s10639-021-10527-x>
- Oliveira, G., Grenha Teixeira, J., Torres, A., & Morais, C. (2021). An exploratory study on the emergency remote education experience of higher education students and teachers during the COVID-19 pandemic. *British Journal of Educational Technology*, 52(4), 1357–1376. <http://doi.org/10.1111/bjet.13112>
- Panda, B. (2007). Top down or bottom up? A study of grassroots NGOs’ approach. *Journal of Health Management*, 9(2), 257–273. <https://doi.org/10.1177/097206340700900207>
- RootsSG. (1996). Another Woman (Amanda Heng) [mixed media]. RootsSG, Collection of Singapore Art Museum. <https://www.roots.gov.sg/Collection-Landing/listing/1035834>
- RootsSG. (2006). Singapore Idols - Army Boys (Jing Quek) [digital inkjet with ultrachrome K3]. RootsSG, Collection of Singapore Art Museum. <https://www.roots.gov.sg/Collection-Landing/listing/1324988>
- RootsSG. (2009). Singapore Idols - Aunties & Uncles (Jing Quek) [digital inkjet with ultrachrome K3]. RootsSG, Collection of Singapore Art Museum. <https://www.roots.gov.sg/Collection-Landing/listing/1320972>
- RootsSG. (2012). Mamashop. 2012 (Dawn Ng) [archival inkjet print collage]. [archival inkjet print collage]. RootsSG, Collection of Singapore Art Museum. <https://www.roots.gov.sg/Collection-Landing/listing/1321414>
- Schonert-Reichl, K. A., & Roeser, R. W. (2016). *Handbook of mindfulness in Education: Integrating theory and research into practice*. Springer New York. <https://doi.org/10.1007/978-1-4939-3506-2>

- Smith, J. K., & Smith, L. F. (2001). Spending Time on Art. *Empirical Studies of the Arts*, 19(2), 229–236. <https://doi.org/10.2190/5mqm-59jh-x21r-jn5j>
- Smith, L. F., Smith, J. K., & Tinio, P. P. L. (2017). Time spent viewing art and reading labels. *Psychology of Aesthetics, Creativity, and the Arts*, 11(1), 77–85. <https://doi.org/10.1037/aca0000049>
- Tang, Y. Y., Holzel, B. K., & Posner, M. I. (2015). The neuroscience of mindfulness meditation. *Nature Reviews Neuroscience*, 16(4), 213–225. <https://doi.org/10.1038/nrn3916>
- Tan, M. K. B., Tan, C. M., Tan, S. G., Yoong, J., & Gibbons, B. (2021). Connecting the dots: The state of arts and health in Singapore. *Arts & Health*, 15(2), 1–16. <https://doi.org/10.1080/17533015.2021.2005643>
- Tate. (2018). *Mindfulness for Members*. <https://www.tate.org.uk/whats-on/tate-liverpool/workshop/mindfulness-members>
- Terry, P. (2023). *Slow Art Day History - Getting Started*. Retrieved September 6, 2023, from <https://www.slowartday.com/about/history>
- Tishman, S. (2017). *Slow looking: The art and practice of learning through observation*. Taylor & Francis. <https://books.google.nl/books?id=e6Q5DwAAQBAJ>
- Van Gogh Museum. (2022). *Open Up with Vincent*. <https://www.vangoghmuseum.nl/en/about/news-and-press/press-releases/van-gogh-museum-launches-mental-health-programme-open-up-with-vincent>
- Van Lith, T. (2015). Art making as a mental health recovery tool for change and coping. *Art Therapy*, 32(1), 5–12. <https://doi.org/10.1080/07421656.2015.992826>
- Vickhoff, B. (2023). Why art? The role of arts in arts and health. *Frontiers in Psychology*, 14. <http://doi.org/10.3389/fpsyg.2023.765019>
- World Health Organization.(2021). *Using the arts to improve health: WHO pioneers large-scale, arts-based health interventions*. <https://www.who.int/europe/news/item/21-04-2021-using-the-arts-to-improve-health-who-pioneers-large-scale-arts-based-health-interventions>
- Zeidan, F., Johnson, S. K., Diamond, B. J., David, Z., & Goolkasian, P. (2010). Mindfulness meditation improves cognition: Evidence of brief mental training. *Consciousness and Cognition*, 19(2), 597–605. <https://doi.org/10.1016/j.concog.2010.03.014>