



# Key Lessons in Adapting Interactive Experiences for a COVID-Safe Museum

SHORT REPORT

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## ABSTRACT

The COVID-19 pandemic has forced museum communities around the world to rapidly re-examine their approach to safe visitor engagement. In an atmosphere of uncertainty, increased attention to hygiene and social distancing, the following is a reflection by *SparkLab* Sciencentre in the Queensland Museum, Australia, two months after reopening. It highlights the key lessons learnt and strategies adopted, as they continue to reshape and reassess their approach to safe hands-on visitor engagement. This reflection also emphasises the overarching importance of agile planning, open communication, and continued monitoring of COVID-Safe operations, visitor engagement and staff wellbeing.

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COVID-19; Science centre; Hands-on visitor engagement; STEM learning opportunities; science and technology museums; science engagement

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## HANDS-ON LEARNING AND THE SPARKLAB VISION

*SparkLab* is a learner-centred, open-ended exhibition where visitors take on the role of scientist and determine their own inquiry-based learning journey. It has a target audience of families and school-aged children (6–13 years), incorporating hands-on exhibits and facilitated, interactive programs to provide both self-led and shared STEM learning opportunities. This active engagement process is facilitated by experienced *SparkLab* Learning Officers.

In the nine months of operation during 2019/2020, *SparkLab* received 89,717 visitors. This included 44,467 visitors engaging in experiments at the Science Bar (*SparkLab* 2020a); 30,892 visitors working on Maker Space challenges (*SparkLab* 2020b); and engaging 8,838 visitors with our interactive globe for Science on a Sphere Explorations (National Oceanic and Atmospheric Administration 2019; *SparkLab* 2020c). With this focus on learner-led interactive programming, and the high volume of visitors, the pandemic has resulted in a challenging process to develop safe methods that still achieve the objectives and vision of *SparkLab*.

## COVID-19 AND THE QUEENSLAND MUSEUM

In March 2020, as COVID-19 cases began to rise in Australia, the Queensland Museum closed its doors. By May, the Queensland State Government had launched a plan to ease restrictions (Queensland Government 2020a), and on June 1, with just five active COVID-19 cases across the state (Queensland Health 2020), museums were permitted to reopen, subject to approval of a COVID-Safe plan (Queensland Museum 2020). On June 22, the Queensland Museum and *SparkLab* reopened to the public.

A comprehensive re-opening plan provided the *SparkLab* team a solid base from which to begin operations. This plan included the following measures:

- Moving from open-ended tickets to one-hour sessions, with a 30-minute gap between sessions.
- Limiting visitor capacity to 20 people per session (assessing increases over time).
- Requiring visitors to pre-book, including visitors eligible for free entry. Visitors are also required to complete contact tracing forms and agree to COVID-Safe practices on entry (Queensland Museum 2020).
- Assigning all exhibits a COVID-Safe risk rating of 1–5. High risk exhibits such as those with microphones or water vapour were removed.
- Reducing or minimising hands-on components of Science Bar and Maker Space programs.
- Introducing a comprehensive cleaning regime between visitor sessions including exhibits and equipment.
- Installing hand sanitiser stations and social distancing signage.
- Minimising and/or regularly changing over loose components for interactive exhibits (e.g., balls, building blocks).
- Training staff in new procedures, including cleaning procedures and risk mitigation strategies.
- Documenting procedures including daily schedules, risk assessments and a comprehensive cleaning plan with daily sign-off of checklists.

In the months since *SparkLab* first welcomed back visitors, this plan has been adjusted and adapted, bringing three key lessons into focus.

## LESSON 1: OPERATIONAL PLANNING IS ESSENTIAL, BUT ADAPTABILITY IS THE KEY TO SUCCESS

The uncertainty of the pandemic situation necessitated an evolving reopening plan. Early recognition that good planning cannot account for all factors is key to preparing staff and management for a responsive and adaptive approach.

Some changes were purely operational, for example, early trials demonstrated that it was not feasible to clean the exhibition in the 30 minutes between sessions. The museum, therefore, contracted cleaners to assist with basic elements of the cleaning schedule.

Adapting plans to improve the quality of visitor experience is a high priority for the *SparkLab* team. Informal feedback gathered by *SparkLab* staff during their interactions with visitors indicated one hour was not sufficient time for visitors to explore *SparkLab* and its programmes. Rather than reduce the offerings, the decision was made to increase session times by 30 minutes. This meant reducing the overall number of sessions per day from four to three.

The experience of the opening weeks has informed forward planning, such as the reintroduction of school group bookings. In line with the Queensland Government COVID-safe policy, students in a class group are considered a ‘family group’. Thus, they are not required to socially distance from each other, but must maintain distancing from other visitors (Queensland Government 2020b). This has required a rethink of program scheduling, session timings and behaviour management.

Even minor changes to the day can cause significant disruptions and impact the team’s ability to deliver the high-quality visitor experience and operational requirements of the space. To ensure all elements of the daily routine can be accounted for, including COVID-Safe procedures, a detailed schedule has been created for each staff role. This schedule, which incorporates the cleaning plan, staff breaks, program and session times, is regularly updated and reissued to the team, making it easier for Learning Officers to adapt to changes with short notice.

## **LESSON 2: TRUST YOUR STAFF TO EXPLORE NEW WAYS OF ENGAGING, WITHIN CLEAR COVID-SAFE BOUNDARIES**

As part of the COVID-Safe plan (available from: Queensland Museum 2020) changes were made to *SparkLab*’s programmed activities to reduce physical contact, limit hands-on elements, and maintain social distancing. Staff also considered ways to maintain the visitor-led focus of programs, and the sharing of staff experiences since reopening has been key to developing and sharing effective strategies.

*SparkLab* Science Bar programs position visitors to ‘be the scientist’, and ordinarily, these programs offer direct hands-on involvement. Learning Officers have been testing ways of facilitating active participation with a ‘hands-off’ approach. This has heavily focused on the visitor as the decision-maker throughout, and using techniques such as more physical role play, the use of narrative, and moving visitors during the program, so different visitors can enjoy standing in the ‘front row’.

The Maker Space is usually a hub of activity, where tactile exploration of materials is encouraged, and hands-on stimulus materials (for example ‘Bucket of Stuck’ ideas cards, challenge cards, thinking dice, photographs and examples of design prototypes) inspire visitors’ own design solutions. To meet COVID-Safe standards, stimuli were re-designed in a visual form, additional cleaning of equipment was introduced, and materials were limited in colour, variety and quantity to reduce visitor handling. Learning Officers experimented with repositioning equipment to allow better visitor movement. They also came up with ways to manage visitors who were unable to finish their designs before the end of their session by suggesting home-based versions of the challenge and creating online resources to assist visitors with setting these up (*SparkLab* 2020b).

Across our programming areas, Learning Officers have developed unique ways of engaging with visitors under COVID-Safe protocols by sharing and adapting each other’s ideas to their own delivery styles. Time has been set aside after team meetings and *via* online group forums to allow for group discussions of new techniques.

## **LESSON 3: RECOGNISE THE IMPORTANCE OF TWO-WAY COMMUNICATION BETWEEN STAFF AND MANAGEMENT**

The global pandemic has forced changes at all levels of museum operations. Clear and regular communication between these groups has been a vital part of the reopening process.

At the Queensland Museum this was modelled from the top with the CEO providing daily email updates about the situation prior to closure and maintaining regular communications throughout shutdown.

Senior museum management worked closely with *SparkLab* management during pre-opening preparations to ensure the processes and procedures put in place were informed by on-floor experiences. Similarly, the *SparkLab* team have recognised the need for operational changes to meet the requirements of management priorities and COVID-Safe practices.

As *SparkLab* increased visitor capacity, challenges on the floor have been communicated and, where necessary, management have responded by adjusting visitor capacity, or making changes to ticket scheduling. Finding the balance between meeting the museum's strategic and revenue targets and creating a sustainable operational model for frontline staff requires open, regular, and honest communication across all levels of the museum. To address this need, the Queensland Museum created four reopening committees (Infrastructure Committee, Finance Committee, Staffing Committee and Re-Opening Committee), with members drawn from management in all departments of the museum. These committees then fed into sub-committees and working parties that included supervisors and front of house staff. The committees met daily to bi-weekly prior to opening and regularly thereafter. All staff members were informed about the committees, so that they understood where they were directly represented, and were encouraged to contact these representatives with any ideas or concerns they had around any area of re-opening or post opening COVID-safe practice. After re-opening management provided opportunities for front of house staff to raise any issues or concerns with them by holding team meetings at the start and end of the day. In *SparkLab*, management moved to be more present on the museum floor, assisting with cleaning and visitor interactions, in order to provide more informal feedback opportunities for staff and also to directly observe how the COVID measures were impacting staff.

Listening and responding to visitor feedback has also been essential in this process. Pre-COVID most *SparkLab* tickets were purchased face-to-face at the museum. The move to, almost exclusively, online ticketing as part of the COVID-safe entry changes has provided greater opportunity to contact visitors post visit and obtain their feedback. *SparkLab* Learning Officers were also encouraged to record feedback received from visitors during their interactions and programming in the daily number tracking tally sheets given to management each day. The feedback received from these sources was reviewed and, where possible, actions were taken to address visitor concerns and improve the visitor experiences, for example when extending the session times.

Staff well-being has been at the forefront of communication and decision making for management. The role of *SparkLab* Learning Officers has transformed significantly with changes to visitor engagement and cleaning duties, while the management team also face new challenges around monitoring changes to procedures and fulfilling strategic objectives. Individuals at all levels are facing personal challenges, from concerns for personal safety, to lifestyle changes. Daily, open and transparent communication within the team, through team meetings, staff feedback and online channels are some of the ways *SparkLab* management are endeavouring to provide support for staff.

## **CONCLUSION: CONTINUING CHALLENGES AND IMPROVEMENTS**

The COVID-19 pandemic is still a rapidly evolving situation, and there will likely be new, unforeseen challenges for the museum in the coming months. An unexpected positive outcome of the Queensland Museum's closure has been the strengthening of connections and communication channels between all levels of the museum. This has been integral for reopening and is something that will strengthen the museum moving forward when navigating the uncertain times ahead. Agile planning, continued discussion, comprehensive documentation, and sharing engagement strategies will continue to play a part in supporting *SparkLab* Learning Officers in their changing roles, and in delivering a high-quality experience for visitors. However, there is no room for complacency and our approach will continue to safely adapt in response to changing circumstances.

## COMPETING INTERESTS

All authors of this paper are employees of the Queensland Museum including members of the SparkLab Learning Officer and management team.

The authors declare no other competing interests.

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