Volume 64 Number 2 April 2021

LEADERSHIP DEVELOPMENT

Becoming a Learning Organization

RANDI KORN[1], KATIE CHANDLER[1], AND COLLEEN MARZEC[2]

[1]RK&A, Inc., Washington, DC, USA
[2]Smithsonian National Museum of Natural History, Washington, DC, USA

Correspondence
Katie Chandler, RK&A, Inc., Alexandria, VA, USA.
Email: chandler@rka-learnwithus.com

Abstract When staff at the National Museum of Natural History (NMNH) opened their newest visitor-experience space, Q?rius (pronounced curious), in 2013, they intended to create an innovative science-learning space that would provide visitors with hands-on access to the museum's world-renowned natural history collections, skill-building experiences, and personal encounters with science experts. Over the years since Q?rius opened, education staff noticed changes in how their colleagues from different departments were working together and suspected that in some contexts the organization was operating differently. In 2018, RK&A studied institutional-level changes at NMNH as a result of Q?rius, and, more broadly, helped staff and leadership understand the ways in which NMNH is a "learning organization" and where there is room for development. In this article we explore the concept of a learning organization, present key takeaways of the NMNH study and how they have been applied in practice, and for those who wish for their organization to grow into a learning organization, provide essential concepts to help them think through how they might pursue such work in their museum.

INTRODUCTION

The term "learning organization" can be confusing to those who work in museums. Historically, many museums have classified themselves as public educational institutions, and more recently they have set aside the word "educational" and replaced it with the more active descriptor "learning." The word "learning" evokes a more apropos and true-to-museums verb while also disassociating itself from the school-like images that are conjured when people use "educational" to describe a core museum function. Visitor studies show that "learning" is among the top reason people visit museums

Randi Korn (korn@rka-learnwithus.com) is Founding Director of RK&A and currently works on intentional practice projects as Intentional Practice Leader. With a passion for museums and desire to strengthen the relationship between museums and the public, Randi works with museums to improve museum practices so they can achieve impact.
Katie Chandler (chandler@rka-learnwithus.com) is a Senior Researcher at RK&A. Before joining RK&A almost six years ago, she worked as a market researcher for higher education and as an applied anthropologist at the University of Arizona.
Colleen Marzec (MarzecC@si.edu) is the Chief of Content Strategy and Development at the Smithsonian National Museum of Natural History. She joined the Museum in 2009 to manage the development and launch of the Ocean Portal, and has a background in journalism, communications, and marketing.

(Packer & Ballantyne, 2002)—a fact that makes museums proud—and in that way, museums can be conceived as learning organizations: places where people go to have learning experiences. However, those who research and write about organizational development and business practices also use the term "learning organization," and they mean something different.

Defining a Learning Organization

In 1990, Peter Senge wrote about learning organizations in his seminal book *The Fifth Discipline: The Art and Practice of the Learning Organization.* He wrote:

> *. . . [learning organizations are] organizations where people continually expand their capacity to create the results they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is set free, and where people are continually learning to see the whole together (Senge, 1990, p. 3).*

Senge's above definition describes an ideal work environment where leadership, staff, and the organization's systems adapt to a continuous state of improvement and learning. Certainly, the concept of a learning organization is an ideal whereby an organization is always pursuing a better version of itself. Pedler et al. (1991, p. 1) agreed: "The Learning Company is a vision of what might be possible. It is not brought about simply by training individuals; it can only happen as a result of learning at the whole organization level. A Learning Company is an organization that facilitates the learning of all its members and continuously transforms itself." Malhotra (1996) defines learning organization as one "with an ingrained philosophy for anticipating, reacting and responding to change, complexity and uncertainty." If a learning organization has an ingrained philosophy, then one could say learning organizations possess a learning *culture* where employees feel comfortable questioning, debating, reflecting, and pursuing creative or risky ideas. Logically, then, a learning culture would also accept failing as a viable outcome rich with opportunities to improve. Garvin (2000) saw a lack of clarity around the definition of a learning organization, in part because the ideas appeared philosophical and theoretical without instructions for implementation. As such, he and a few of his colleagues published an important article that sought to identify characteristics of a learning organization, and it included a tool so staff could assess their organization's depth of learning (Garvin et al., 2008). Seven years later, Gino and Staats (2015) published a piece that describes the sustained effort needed to maintain a learning organization, and what happens when organizations lose sight of the guiding characteristics of learning organizations; it is titled "Why Organizations Don't Learn."

The three essential building blocks for learning organizations, as identified by Garvin et al. (2000) are:

1. *A supportive learning environment,* in which staff feel safe to disagree with one another (regardless of their position), ask questions freely, and take responsibility for actions; appreciate differences, such as valuing alternative paradigms; are open to new ideas and taking risks; and recognize that time spent off task, reflecting on one's work, can lead to rich professional learning.

2. *Concrete learning processes and practices,* all of which contribute to one's learning, such as experimenting with ideas and testing new products, and while doing so, generating, collecting, interpreting, and disseminating related information to build organizational knowledge.

3. *Leaders who value and reinforce staff learning,* as without a leader who instills a learning culture by changing systems, modeling learning behaviors, and implementing concrete learning processes and practices, staff may inadvertently accept the status quo and stagnate.

When leadership models and nurtures professional growth, staff will feel free to create reach- or stretch-goals in their work, staffs' collective growth will reinforce the organization's systems, staff will feel comfortable taking risks, and people will see their organization as a singular entity where everyone works and learns together. When staff act in such ways, then presumably their organization is a learning organization. Among the three building blocks noted above, leadership is the linchpin, but a learning organization also needs the other two building blocks to maintain internal stability.

Studying a Museum as a Learning Organization

When staff at the National Museum of Natural History (NMNH) were designing their newest visitor-experience space, Q?rius (pronounced "curious"), their intent was to create an innovative science-learning space that would provide visitors with hands-on access to the museum's world-renowned natural history collections, skills-building experiences, and personal encounters with science experts. Q?rius was a significant financial investment for the museum and somewhat of a risk because it represented a shift in how the museum uses its public spaces and what constitutes a visitor experience. From the very early days of developing Q?rius, museum staff consistently reflected on, assessed, and sought to improve their ideas and work (Werb, 2018). Then, in 2014, a year after Q?rius opened to the public, RK&A conducted a study to explore the effect of Q?rius on visitor learning and deepen staff members' understanding of the visitor experience (RK&A, 2014). The study yielded important information that helped staff finetune how they train floor staff and implement their programs; yet, education staff suspected there could be more to the effects of Q?rius, not on visitors, but on NMNH staff and the museum. In the years since Q?rius opened to the public, education staff observed a shift in how some of their colleagues in other departments were working together on behalf of Q?rius. They suspected that Q?rius had affected staff interactions and that, in some contexts, the organization was operating differently. Education staff wanted to determine if Q?rius was affecting the organization, its staff, and its systems, and, if it was, in what ways. The hypothesis could be stated as: Q?rius—its open floor plan, purpose as an object- and content-rich learning space where visitors interact with collections and science experts, and its multi-use programming space—positively influenced staff interactions and organizational behaviors and systems toward NMNH becoming a learning organization. RK&A was asked to study institutional-level changes at NMNH as a result of Q?rius, and to more broadly determine the ways in which NMNH is a learning organization and where it falls short.

Senge's (1990) definition of a learning organization noted earlier, became a starting point for conceptualizing what it means to be a learning organization in the context of a museum. We were also influenced by the three building blocks of a learning organization that Garvin et al. (2008) posited: a supportive learning environment among staff, concrete learning processes and practices to expand organizational knowledge, and leaders who value and reinforce staff learning. As we developed our strategy, we came to realize that if we were going to measure NMNH as a learning organization, we needed an explicit and concrete definition so as to avoid our museum practitioner respondents' confusing the idea that museums are places where people learn versus a learning organization, as mentioned earlier. While exploring literature from the nonprofit sector, we came across the Center for Nonprofit Excellence. It describes a *learning culture* as one that creates the foundation for a learning organization in specific and tangible terms (Center for Nonprofit Excellence, 2016). Thus, we chose to use elements of Senge, Garvin and The Center for Nonprofit Excellence's definitions to create a definition of a learning organization to support the purpose of this study, using concrete language that would resonate with museum practitioners:

> *A learning organization embraces inward-looking reflection, feedback, and knowledge-sharing as part of its day-to-day operations. It promotes collaboration, experimentation, and opportunities for staff to be aspirational. Learning organizations continually learn from staff experiences and apply that learning to improve.*

Embedded in the above definition are six core concepts:

1. *Inward-looking reflection* (reflecting on one's work with the goal of learning from one's work)
2. *Feedback* (seeking input from others to improve one's work)
3. *Knowledge sharing* (sharing what one has learned from one's work)
4. *Collaboration* (working with colleagues within and outside one's department)
5. *Experimentation* (exploring new ideas and approaches in one's work)
6. *Aspirational thinking* (taking a risk in one's work)

We used the above definition and six concepts to guide us in developing the data collection tools and support our interactions with respondents. Our study explored the six concepts independently from three organizational levels: personal, departmental, and leadership, with the understanding that organizations comprise small units (individuals) and larger units (departments and leadership), and all can contribute to and support a learning organization.

METHODS

RK&A used a mixed-methods approach to understand the effect of Q?rius on NMNH as an organization. The study objectives that guided our analysis were as follows:

1. Understand the extent to which NMNH is a learning organization (including drivers of and potential barriers to the embracing the values of learning organizations)
2. Gauge the extent to which Q?rius has had an impact on organizational learning (staff and systems) at NMNH
3. Identify opportunities for stimulating, sustaining, and increasing learning-organization values at NMNH through Q?rius.

Document Review

First, RK&A reviewed background documents—such as board and staff presentations during the development of Q?rius; fundraising and marketing materials; and past results of the Smithsonian Employee Perspective Survey (SEPS) for NMNH staff—to understand the context behind Q?rius' development and the learning culture at NMNH.

Staff Interviews

RK&A staff conducted one-on-one and group interviews with NMNH staff (see Supplemental Information for interview guides). RK&A and NMNH staff co-developed a list of potential interviewees to capture a broad cross-section of NMNH departments and varying intensities of interaction with Q?rius. Interviewees were recruited by email. One-on-one interviewees were given the choice to participate in person or by telephone. All group interviews were conducted onsite at NMNH. Interviews were audio-recorded with the participants' permission and transcribed for analysis.[1] All interview files were assigned ID numbers and delinked from individual names to protect confidentiality.

Interview data are qualitative, and results are descriptive. In analyzing the data, the evaluator used emergent coding, studying the interview notes for meaningful patterns and grouping similar responses as patterns and trends emerged. The objectives of the study informed the analysis.

Staff Questionnaires

NMNH staff were emailed an online questionnaire using the SurveyMonkey® platform. Questions included mostly multiple-choice questions and rating scales (see Supplemental Information for the questionnaire instrument). The questionnaire also included several opportunities for "other" response options, which generated qualitative responses that were categorized in analysis. Staff received three reminder emails from an NMNH staff member requesting their participation in the survey.

Quantitative data were analyzed statistically using SPSS 20 for Windows. A statistician advised on the analysis plan and reporting. Quantitative analyses included frequency distributions (e.g.,

percent of respondents who provided a certain response; summary statistics (e.g., mean ratings); and inferential statistics to examine the relationship among variables. Inferential statistical analyses included (1) chi-square tests to examine whether the associations between variables are statistically significant, and (2) analysis of variance (ANOVA) and the F-statistic to test the significance of the difference among groups on continuous measures.

Representation of Sample

To protect the anonymity of respondents and minimize the personally identifiable information collected, the only respondent characteristics collected were museum area in which they worked, staff level, and years working at NMNH. Analysis focused on respondents working in the two museum areas most closely related to Q?rius—Public Engagement and Research and Collections. Out of 99 Public Engagement staff emailed, 47 responded for a 47% response rate. Out of 437 Research and Collections staff emailed, 92 responded for a 21% response rate. Twenty-four respondents who did not identify their museum area were also included in our research sample. RK&A could not determine the representativeness of the respondent sample to the all-staff sample by staff position or years because NMNH was unable to provide RK&A with all-staff data for comparison by these characteristics.

Participants

The study design and procedures were reviewed by the Smithsonian Institutional Review Board (IRB) as required for any study involving human subjects (in this case, NMNH staff). In addition, the study underwent a Privacy Threshold Assessment to facilitate the identification of potential privacy issues; assess whether additional privacy documentation is required; and ensure the Smithsonian's compliance with applicable privacy laws and policies.

RESULTS

The six concepts embedded in our definition of a learning organization (inward-looking reflection, feedback, knowledge sharing, collaboration, experimentation, and aspirational thinking/risk taking) are important for all organizations. Museums that function as learning organizations will be better equipped to have a positive impact on visitors because when staff are committed to learning from one another, their programs and exhibitions will benefit, and by extension, so will visitors. We came to realize that for a museum to be a living and breathing learning organization, it takes more than understanding the six core concepts in our definition—it takes embracing these concepts as *values* that staff use to guide their daily work. As such, the presentation of results that follows focus on the ways in which the six values are or are not evident in staff's Q?rius-focused work from three organizational levels: individual, departmental, and leadership.

Inward-looking reflection	*n*	Mean rating
I regularly reflect on my work with the goal of learning from my work.	160	5.8
My department head regularly spends time with the department to reflect on our work with the goal of learning from our department's work.	156	4.0
NMNH leadership demonstrates that it values staff taking time to regularly reflect on the museum's work with the goal of learning from the museum's work.	159	3.7
Feedback from colleagues		
I regularly seek feedback from my colleagues about my work so I can improve my work.	160	5.3
My department head regularly considers feedback from me and others in my department about our department's work	158	4.4
NMNH leadership regularly considers feedback from staff about the museum's work.	158	3.6
Feedback from public		
I regularly seek feedback from the public about my work.	160	4.8
NMNH leadership regularly seeks feedback from the public about the museum's work.	158	4.6
My department head regularly seeks feedback from the public about our department's work.	156	4.2
Sharing knowledge		
I regularly share with colleagues *in my department* what I learn through my work.	150	5.3
My department head encourages us to share *within the department* what we are learning through our work.	147	4.5
I regularly share with colleagues *in other departments* what I learn through my work.	150	3.8
NMNH leadership demonstrates that it values knowledge sharing *across the museum*.	149	3.8
My department head encourages us to share with colleagues *in other departments* what we are learning through our work.	145	3.7
Collaboration		
I regularly collaborate with colleagues *in my department*.	150	5.8
My department head regularly encourages us to collaborate with colleagues *in our department*.	145	5.0
I regularly collaborate with colleagues *in other departments*.	150	4.7
I regularly collaborate with colleagues *outside the museum* on museum projects.	148	4.7
My department head regularly encourages us to collaborate with colleagues *in other departments*.	146	4.4
My department head regularly encourages us to collaborate with colleagues *outside the museum*.	146	4.2
NMNH leadership demonstrates that it values *across-the-museum collaboration*.	149	4.2
Experimentation/Trying new things		
I feel comfortable exploring new ideas and approaches in my work.	146	5.7
My department head regularly encourages us to explore new ideas and approaches in our work.	143	4.6
NMNH leadership demonstrates that it values the museum exploring new ideas and approaches.	145	4.2
Aspirational thinking		
My department head creates a safe environment for us to take risks without consequences if the attempt doesn't go well.	141	4.4
NMNH leadership provides a safe environment for all staff to take risks without consequences if the attempt doesn't go well.	142	3.6

RATING SCALE: 1 (Strongly disagree) / 7 (Strongly agree)

Figure 1. Staff ratings of NMNH learning organization values for personal, departmental, and leadership levels.

NMNH possesses some, but not all, of the values of a learning organization

Results revealed a complex and nuanced web of learning organization values at NMNH (see Figure 1). Figure 1 summarizes the results of a series of rating-scale questions from the staff questionnaire that explored all six learning-organization values. Staff were asked to rate every value from three vantage points: personal actions they take in pursuit of the value, perceptions of support they receive from their department head, and perceptions of NMNH leadership regarding that value.[2] Overall, staff rated collaboration and experimentation highest; reflection, seeking feedback, and knowledge sharing fell to the middle; and aspirational thinking and risk taking was rated lowest. Interview data generally supported these findings.

> *The museum is occasionally a learning organization. And parts of it learn better than others. . . . Promoting collaboration, experimentation, opportunities to be aspirational, all of those things are things that we do from time to time, and then we don't do them lots of other times. --Science staff*

Looking deeper into questionnaire results, staff reported the strongest learning-organization values at the personal level (mean ratings ranged from 4.4 to 5.8 on a scale from 1 [strongly disagree] to 7 [strongly agree]). That is, for all of the values, staff reported that they take personal initiative to collaborate, reflect, experiment, seek feedback, share knowledge, and think aspirationally or take risks, but feel less support from their departments (mean ratings ranged from 3.7 to 5.0) and the leadership of the museum (mean ratings ranged from 3.6 to 4.6) to pursue these values. This is perhaps unsurprising, as when people are asked to rate themselves, they may unconsciously base their ratings on their intentions, rather than the reality of their actions (see Donaldson & Grant-Vallone, 2002, for example). It is interesting to note, however, the values for which there are large gaps between staff's personal ratings and departmental- or leadership-support ratings: reflection (mean rating 5.8 for personal action versus 3.7 for leadership support), experimentation (mean rating 5.7 for personal action versus 4.2 for leadership support), and seeking feedback from colleagues (mean rating 5.3 for personal action versus 3.6 for leadership support). These rating gaps indicate that staff perceive a lack of commitment among departments and with leadership towards these particular learning-organization values, and thus, staff observe that these values are neither departmental nor institutional priorities. These gaps have important implications as NMNH staff, like most museum professionals, strive to balance a heavy workload of competing priorities, and they are less likely to devote their time to pursuing values they perceive as having low value to management (who control their performance reviews and steer institutional initiatives).

Q?rius positively affected collaboration and experimentation in particular at NMNH

Staff questionnaire and interview data suggest collaboration is one of the strongest learning-organization values at NMNH, particularly collaboration within (versus across) departments. Collaboration was not absent at NMNH before Q?rius—staff worked in cross-departmental teams to develop exhibitions and on internal committees. However, commitment to collaboration deepened with the development and launch of Q?rius. In interviews, scientists and educators described an increasingly equal partnership when developing Q?rius' programs, where both parties valued one another's input and learned from the other's expertise. A new liaison program, which started around the same time as Q?rius, formalized lines of communication between education staff and science departments, inspiring more interdepartmental collaborations in Q?rius. And, the physical space of Q?rius, with its flexible design and meeting spaces, stimulated collaboration because staff emerged from their offices to convene in Q?rius, thereby reducing the literal physical divide that results from working in a vast museum building and providing a space for intellectual fellowship.

> *Space matters, and the way that it's designed matters. . . . [Q?rius] has been a hub for collaborating, whether it's planning for bigger workshops, or bringing in people from the outside to think through things. . . . There's something about the space that is inspiring for people. --Education staff*

Data also suggested that Q?rius has provided a forum for experimentation and innovation that had not existed before—staff moderately agreed with the statement "Q?rius increased staff's ability to

Statement	Research/ Collections Mean rating	Public Engagement Mean rating	p-value
My department head creates a safe environment for us to take risks without consequences if the attempt doesn't go well.	4.6	3.8	.022

RATING SCALE: 1 (Strongly disagree) / 7 (Strongly agree)

Figure 2. Difference by museum area for aspirational thinking value.

experiment with innovative programming ideas (mean rating 5.3 on a scale from 1 [strongly disagree] to 7 [strongly agree]. Somewhat separated from the main exhibition halls in the museum, education staff believed that there was less pressure for Q?rius programs to meet traditional metrics (e.g., draw a large audience), and thus staff felt they had more freedom to experiment with new content, activities, and program format. Moreover, Q?rius' flexible physical design allows for adapting to the needs of many different types of programs and events. While staff spoke positively about increased opportunities to experiment and innovate with programs in Q?rius, they indicated that these values are not fully embraced by the institution as a whole, especially for those in public-facing roles. For example, we found a statistically significant difference in perceptions of departmental support for risk-taking when comparing Public Engagement staff responses (mean rating 3.8) versus Research and Collections staff responses (mean rating 4.6) (Figure 2).

Notably, while staff believe that, as an organization, NMNH appreciates and respects experimentation and innovation, it struggles to execute those values in practice outside the walls of Q?rius. Experimentation, a key element of learning organizations, stimulates new ideas through taking risks and "expanding horizons" for what organizations believe is possible (Garvin, 1993, pp. 4–5). Staff believe that bureaucracy (e.g., the layers of approval required to move new ideas forward) and a fear of failure deter staff from experimenting and innovating at the museum.

Staff need guidance prioritizing learning-organization values in their everyday practice

Continual learning is at the heart of learning organizations, and developing, opening, and running Q?rius proved to be a significant learning experience for staff who participated in the process. NMNH staff who have worked closely with Q?rius over the years appear to have embraced many learning-organization values in their personal professional practice, perhaps in part because the ethos of Q?rius overlaps with many learning-organization values (e.g., working collaboratively, trying new approaches, taking risks). However, participation in Q?rius is uneven across staff, and similarly, not all staff are interested in pursuing learning-organization values or the work of Q?rius. This begs the question, how can NMNH strengthen learning-organization values, not just among staff who work (ed) closely with Q?rius, but also among those who do not?

If I look at the way I am rewarded as a scientist, it's through my performance evaluations which ultimately come down to my research. . . and that doesn't always get me to think across boundaries and think about outreach as much as I could. --Scientist

Staff interviews suggested that individual performance plans, the plans used to evaluate an individual's work over time, often drive staff's work priorities and do not reflect learning-organization values. Thus, the extra time and effort it takes to pursue collaboration, gather feedback from colleagues, or reflect on past projects was not encouraged or incentivized for staff. For example, some staff observed that scientists' performance plans often prioritize conducting research and publishing, leaving little time or incentive to collaborate with other NMNH departments. If staff perceive management as not supporting learning-organization values, they may struggle to prioritize these values personally and departmentally, given their many competing responsibilities. In short, if a museum wants to cultivate learning-organization values, it needs to integrate those values into organizational systems such as strategic plans, annual planning, and staff reviews, both of which would send a message to staff that the organization prioritizes those values, and they should, too, as they pursue their strategic work and daily practice.

DISSEMINATING AND APPLYING THE RESULTS

The findings of the study were presented in two settings: (1) by RK&A in a meeting that was open to the entire museum staff (attendees included members of the executive team, the senior staff, and staff from exhibits, education, science, and other departments) and (2) by a senior NMNH staff and core-team member for this study to senior managers and executive-level personnel. Even though many who attended these presentations were study respondents, the idea of an internally-focused study still seemed unusual to some. For example, during the Q&A that followed RK&A's presentation, some attendees expressed a desire for a more conventional study that would focus on the effect of Q?rius and its programs on visitors. (As noted earlier, the museum had conducted such a study in 2014 and was also concluding a 2018–19 visitor demographic study.) Other attendees seemed more open to and comfortable with the premise of evaluating NMNH as a learning organization.

Following RK&A's presentation and in a reflection workshop later that afternoon, staff discussed ideas for how to incorporate the findings into their work going forward. Some recognized that paying attention to *how* staff work together as a community of museum professionals (the process) influences the quality and effectiveness of their work (the outputs), which in turn affects the visitor experience (outcomes). During the reflection workshop, participants from exhibits, education, science, IT, and HR departments generated a range of compelling ideas about the implications of the study findings, including the need to build greater trust among staff, reconfigure some of the museum's structures and systems, remove layers of bureaucracy, become less risk-averse, improve communication in all directions, and rebalance how the museum defines goals and reports the impact of its work (shifting from mostly measuring quantitative outcomes to measuring more qualitative outcomes).

Drawing on the study findings about staff needing more formalized support to prioritize learning-organization values, RK&A recommended that staff use their annual performance plans to take "baby steps" toward becoming a more fully realized learning organization. In other words, could a staff member, team, and/or department create performance goals to support the development of a particular learning-organization value? Staff recently shared a few examples of how they have started to operationalize learning-organization values in their performance plans:

1. Contribute to strengthening the learning-organization value of reflection by participating in "Reflecting on Practice," an interdepartmental professional-learning program at NMNH.
2. Develop the learning-organization value of experimentation by submitting a proposal to the Smithsonian's internal funding arm for a new event series, program, or exhibition that challenges traditional boundaries among disciplines and departments.
3. Develop the learning-organization values of knowledge-sharing and feedback by presenting evaluation findings of the Museum's distance-learning program to the NMNH community and inviting input on ways to integrate findings into future work.
4. As of this writing, at least 20 staff members will be integrating the learning-organization values into their performance plans for the year.

DISCUSSION

Investigating the impact of Q?rius on the culture of learning at NMNH has deepened the organization's understanding of its staff and systems. From a learning-organization perspective, the study brought to light certain strengths (e.g., collaboration) and weaknesses (e.g., experimentation and aspirational thinking), and provided insight into how staff perceive their personal work independently and in relation to departmental and executive leadership. Perhaps most importantly, data from this study lay the foundation for having important conversations and hopefully continued reflective discussions on how to strengthen NMNH as a learning organization. As Garvin et al. (2008) notes, without data, "reflection can become abstract and susceptible to idiosyncratic assessments and often emotional disagreements about the current state of affairs." Data provides concrete evidence and examples that can be used to drive conversations with staff and leadership about how NMNH can continue to grow as a learning organization.

Collaboration

Staff rated collaboration the highest among the six values, which is positive, because collaboration is a potential vehicle for pursuing the remaining five values. As an example, if staff regularly convene to work together on specific projects, department heads representing the various collaborative partners could identify one or two other values they want to infuse into their collaborative work processes. If department heads want to infuse new learning-organization habits into daily practice, each

project meeting could begin with a ten-minute group reflection and end with a ten-minute feedback discussion. Reflections could include conversations that focus on what staff have gained thus far from each other and what they appreciate about the opportunity to work on collaborative projects, and the feedback discussion might *invite* constructive feedback from all (which is very different from waiting for the usual people to share their opinions). Rules of engagement may need to be part of what department heads determine in order to build and maintain trust and preserve civility in such discussions. The next step would be to take these new habits that occur in one situation and introduce them into other contexts, such as department meetings.

Experimentation

Experimentation is a vital value of a learning organization, and it was rated lower than collaboration; and aspirational thinking, also a vital value, was rated even lower than experimentation. The definition of a learning organization employed in this study notes that a learning organization "promotes collaboration, experimentation, and opportunities for staff to be aspirational. . ." Experimenting and having aspirations both require psychological safety—Garvin's first building block—because if staff are going to step out on a limb with an unusual project idea or follow their intuition, they have to feel safe doing so. As noted in the study, fear of failure is a significant barrier to experimentation and aspirational thinking, and both values were discussed in the context of notions of success, specifically, attendance figures. In the study, Q?rius staff acknowledged that there are relaxed expectations regarding that particular metric, which is one reason why experimentation takes place more readily in Q?rius compared to other areas of the museum. Weil (2002), among others (see Scott, 2006, for example), has noted that attendance is not a useful marker of a museum's success; more relevant is the difference the museum makes in the quality of someone's life. If numbers continue to be the gauge for success, staff may simply want to create programs they know will be crowd pleasers instead of experimenting with program and exhibition approaches that connect with visitors in new and meaningful ways.

Failure is a mindset and it drives fear (Peppercorn, 2018). If success is a number, then failure is when that number isn't reached—a fairly uninteresting pursuit. Also, with numbers the marker of success, there is the presumption that the only acceptable direction to go is up; eventually someone should ask, "when is enough, enough?" In a learning organization, any professional can jettison the concept of failure from their mind and adopt a more positive concept—*learning*. In a learning organization, staff and leadership work to learn so they can improve the quality of their output (e.g., projects, research, exhibitions) to advance the quality of the visitor experience. If a visitor-focused qualitative metric is not met, appropriate questions to ask are, "What did we learn from doing this work? How can we improve our collective work to reach a better result with visitors?" By reframing success in this way, learning from one's work in pursuit of enhanced visitor experiences creates an exciting cycle of learning and improvement. Failure has nothing to do with the joy one feels from continuously improving one's work. If staff want to create a new gauge for success, they might try identifying truly distinct qualities of their museum and use them to articulate outcomes. Then they

very well may feel inspired to experiment with programs and exhibitions that accentuate those qualities in the museum's public work.

Leadership, Managers, and Organizational Culture

In the context of pursuing and supporting the six learning-organization values, leadership was rated lowest among the three levels that this study explored (personal, departmental, and leadership). Noted earlier, leadership is a necessary and vital building block to a learning organization. Leadership and learning organizations are best discussed in the context of organizational culture because leadership works with the pre-existing organizational culture to shape a learning organization, as this quotation illustrates: "At its core, the role of culture is to reinforce a sense of belonging, a shared commitment among colleagues about how they solve problems, share information, serve customers, and deliver experiences. . . the best cultures and the most effective leaders keep learning as fast as the world is changing" (Taylor, 2017).

The relationship between leadership and organizational culture is interactive, and we would be remiss if we didn't raise the contextual importance of an organization's culture in shaping a learning organization. While this study did not explore NMNH's 100-year-old dual culture of an academic scientific research museum and informal learning institution, the data show the persistence of those two cultures within the organization. Ideally, leadership balances supporting the organization's culture and traditions while challenging staff to adapt to the fast-changing world in which the museum resides. However, sometimes organizational cultures fracture—in a good way—and change emerges from the middle of the organization; in the case of this study, we see Q?rius and certain departments as representing the middle. There is evidence in the qualitative and quantitative data that the two professional practices that constitute the organization's culture are collaborating more since the addition of Q?rius.

In the context of Garvin's (2000) three building blocks, leadership is responsible for identifying learning-organization practices, changing internal systems so they support learning, and setting the tone through modeling behaviors. Managers and department heads are responsible for creating a supportive learning environment for their staff and implementing concrete processes and practices following cues from leadership. Ratings indicate that department heads are perceived as doing a better job of fostering learning-organization values compared to executive leadership. While leadership has considerable work to do if it wants to support staff as they pursue learning-organization values, the middle can continue to strengthen, and it may even garner admiration from leadership in doing so. Overall, ratings show that there is room for improvement all around the organization—among staff (individuals and department heads) and leadership—across all learning-organization values. None of the items were rated higher than 5.8 (personal actions), 5.0 (departmental support), and 4.2 (leadership support). Given what this study reveals, there is much for the whole organization to contemplate. As a learning organization, NMNH need not interpret these findings as a failure but as an opportunity to reflect and move forward.

CONCLUSION

Garvin's (2000) three building blocks of learning organizations lend context to the challenge of growing into and continuing to evolve as a learning organization. In a learning organization, the environment exudes psychological safety so people feel free to voice differences, express themselves, and try new ideas; the organization has concrete learning processes and practices that support individual and group learning and development; and its leaders model openness, inquisitiveness, and an appreciation for differing viewpoints. All three building blocks are required, and much like a three-legged stool if you take one of the legs away, the stool can no longer stand. However, most organizations have limits regarding how much change they can handle at one time. Therefore, an organization may choose to focus on one of the blocks for a period of time if the need of that block is particularly acute, as long as the organization does not completely neglect the other two blocks in doing so. Only a new organization might have the luxury of building learning organization systems from scratch. Even then, hindsight is 20-20, and there is always a better way to actualize a concept as sophisticated as a learning organization.

At the midpoint and end of 2020, NMNH staff were invited to participate in a reflection discussion about their experience with and progress towards more fully integrating learning-organization values into their work. Still, it is clear that in the future, NMNH will need to find ways to communicate the value of strengthening the museum around learning-organization values. Those who are most passionate about this work will need to convince their colleagues and the museum's leadership that becoming a strong learning organization ultimately leads to better public programs and activities, scientific research, and internal operations which collectively will benefit all, including museum visitors and other constituents.

One interviewee declined to be audio-recorded, so the interviewer instead typed detailed notes of the conversation. **END**

NOTES

1. One interviewee declined to be audio-recorded, so the interviewer instead typed detailed notes of the conversation.
2. Note that the questionnaire did not include items on perceptions of NMNH leadership support for sharing knowledge *within departments* and collaboration *within departments* or *outside the museum* because we perceived these as outside the purview of leadership. The questionnaire also did not ask about personal action on aspirational thinking.

REFERENCES

Center for Nonprofit Excellence. (2016). What's a learning culture and why does it matter to your nonprofit? https://www.centerfornonprofitexcellence.org/news/whats-learning-culture-why-does-it-matter-your-nonprofit/2016-5-11

Donaldson, S., & Grant-Vallone, E. J. (2002). Understanding self-report bias in organizational behavior research. *Journal of Business and Psychology*, 17, 245. https://doi.org/10.1023/A:1019637632584

Garvin, D. A. (1993). *Building a learning organization*. Harvard Business Review, July/Aug. https://hbr.org/1993/07/building-a-learning-organization

Garvin, D. A. (2000). *Learning in action: A guide to putting the learning organization to work*. Harvard Business School Press.

Garvin, D. A., Edmondson, A., & Gino, F. (2008). *Is Yours a Learning Organization?* Harvard Business Review, March, 109-116.

Gino, F., & Staats, B. (2015). *Why Organizations Don't Learn*. Harvard Business Review, 110–118.

Malhotra, Y. (1996). *Organizational Learning and Learning Organizations: An Overview*. AIMLExchange. https://www.brint.com/papers/orglrng.htm

Packer, J., & Ballantyne, R. (2002). Motivational Factors and the Visitor Experience: A Comparison of Three Sites. *Curator*, 45, 183–198.

Pedler, M., Burgoyne, J., & Boydell, T. (1991). *The Learning Company: A Strategy for Sustainable Development*. McGraw-Hill.

Peppercorn, S. (2018, December 10). *How to overcome your fear of failure*. Harvard Business Review. https://hbr.org/2018/12/how-to-overcome-your-fear-of-failure

RK&A, Inc. (2014). *Summative Evaluation: Q?rius*. Prepared for the National Museum of Natural History. https://www.informalscience.org/summative-evaluation-qrius

Scott, C. A. (2006). Museums: Impact and value. *Cultural Trends*, 15(1), 45–75. https://doi.org/10.1080/09548960600615947

Senge, P. (1990). *The fifth discipline: The art and practice of the learning organization*. Doubleday.

Taylor, B. (2017, June 1). *5 Questions to ask about the corporate culture to get beyond the usual meaningless blather*. Harvard Business Review. https://hbr.org/2017/06/5-questions-to-ask-about-corporate-culture-to-get-beyond-the-usual-meaningless-blather

Weil, S. (2002). *Making museums matter*. Smithsonian Books.

Werb, S. (2018). Q?rius, The Coralyn W. Whitney Science Education Center: Where Intentional Practice Thrives. In R. In Korn (Ed.), *Intentional practice for museums: A Guide for Achieving Impact*. Rowman & Littlefield.