Crisis communication and learning: The US higher education's response to a global pandemic

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Received 10 October 2021
Revised 31 January 2022
15 March 2022
Accepted 16 March 2022

Abstract

Purpose – This study investigates the processes that the US universities and colleges used to learn during the COVID-19 pandemic and the factors that facilitated and impeded their learning processes.

Design/methodology/approach – To address this study's research questions, this study used a crisis communication and learning lens to interview crisis response team members from 30 US higher education institutions in May 2020 (the first pandemic semester). In October 2020 (the second pandemic semester), this study conducted follow-up interviews with 25 of the original interviewees. Overall, this study conducted 55 interviews.

The authors would like to thank Professor Timothy L. Sellnow of the University of Central Florida for his contributions to this research.

Funding: This study was funded by the University of Maryland's coronavirus seed grant program.

Ethics Review: This study was approved by the University of Maryland Institutional Review Board (ethics approval #1583498–4) and the Wayne State University Institutional Review Board (ethics approval #1583498). The University of Central Florida Institutional Review Board also administratively approved the study, but did not provide a separate approval number. At the time this research was conducted, co-author America Edwards was a master's student at the University of Central Florida. All leaders provided written consent to participate in the study.

The Learning Organization

0969-6474
DOI 10.1108/TLO-10-2021-0121

Findings – Learning during the COVID-19 pandemic is facilitated by a recognition of a serious deficiency in the current system and impeded by the need to act quickly. The findings demonstrate the process by which decisions, actions and strategies emerged during crises.

Originality/value – This investigation illustrates how crises can prompt organizational learning while demonstrating the critical role of internal and external resources in the learning process.

Keywords Organizational learning, Higher education, Crisis communication, Vicarious learning, Experiential learning

Paper type Research paper

Coronavirus (COVID-19) emerged in China, in 2019, becoming the most devastating pandemic since the 1918 Spanish Flu (Miller, 2021). COVID-19 created widespread mortality, morbidity, social and economic disruption. The pandemic sent "unprecedented shocks" through higher education, challenging sensemaking and rapidly transforming core operations and threatening stability (Liu *et al.*, 2021a; Miller, 2021). The US colleges and universities were forced to deliver courses remotely, change schedules, develop safety protocols, evaluate their values and reimagine higher education during a pandemic (Liu *et al.*, 2021a; Miller, 2021). The need for rapid change in response to the pandemic was a significant challenge (Liu *et al.*, 2021a).

Novel circumstances, like the COVID-19 pandemic, can be characterized as crises, which require organizations to use learning processes (Miller, 2021). According to Sellnow and Seeger (2021), crises are high uncertainty events, necessitating communication processes to collect information, inform decisions, construct meaning and coordinate responses, all of which are facilitated through learning (Canary and McPhee, 2010; Vashdi *et al.*, 2019). Specifically, learning in crisis emphasizes the need to develop a capacity for coping and managing ongoing crisis events. Additionally, learning helps organizations maintain a balance between emergence and emergency as they engage with unpredictable events (Antonacopoulou and Sheaffer, 2014).

To date, most studies examine crisis learning retrospectively (Elliott, 2009; Sydnes *et al.*, 2021), and only a few examine how organizations learn during crises and how these processes are related to their management and responses (Antonacopoulou, 2005; Antonacopoulou and Sheaffer, 2014; Miller, 2021). As such, this study examines how the US colleges and universities have learned, through a communication-enabled process to develop, integrate and apply information while responding to the COVID-19 pandemic.

Organizational learning and crises

Organizational learning is the process whereby organizations acquire new information and implement behavioral changes accordingly (Haneberg, 2021; Myers, 2018; Wooten and James, 2004). Furthermore, Dodgson (1993) described organizational learning as:

> [. . .] the ways firms build, supplement and organize knowledge and routines around their activities and within their cultures and adapt and develop organizational efficiency by improving the use of the broad skills of their workforces (p. 377).

Organizational learning is an essential process, involving organizational adaptation to changing conditions, including those during crises.

The relationship between learning and behavioral change is grounded in individual-level theories (Bandura, 1977) as well as in organizational management research (Antonacopoulou and Sheaffer, 2014; Myers, 2018; Smith and Elliott, 2007). Organizational learning occurs through interactions at various levels including individual, team,

organizational and inter-organizational (Haneberg, 2021; Myers, 2018). Thus, learning involves both individuals (e.g. leaders) and social processes such as networking, collaboration and sharing of resources across departments and hierarchical levels (Berson *et al.*, 2006; Haight and Marquardt, 2018 for more details). Such collaboration can also occur outside of an organization. In doing so, leaders may generate new ideas and translates those ideas into knowledge for action (Berson *et al.*, 2006; Haight and Marquardt, 2018).

A variety of organizational learning forms and processes have been described, including learning after crises (Smith and Elliott, 2007; Wooten and James, 2004), vicarious learning (Myers, 2018) and single-loop and double-loop learning (Argyris and Schon, 1996; Deverell, 2009). Organizational learning as crises unfold, however, is less understood, though researchers agree crises require organizations to learn and respond (Antonacopoulou and Sheaffer, 2014; Sellnow and Seeger, 2021; Smith and Elliott, 2007). Therefore, we argue that crises facilitate organizational learning by signaling serious deficiencies and prompting a search for new knowledge, known as crisis learning (the processes for organizations to rapidly adapt to uncertain and threatening circumstances). Immediate response is necessary and the use of existing knowledge as well as development of new responses, routines and structures are essential (Antonacopoulou and Sheaffer, 2014; Haneberg, 2021; Wang, 2008; Wooten and James, 2004).

Learning can occur during or after crises, but it is most often considered a post-crisis process, such as through action reports, or crisis-response assessments (Sellnow and Seeger, 2021). While learning is difficult and leaders may be resistant to learning during the actual crises, some organizations collect information through direct and indirect experiences to rapidly engage with a variety of learning processes and techniques (Miller, 2021; Rerup and Feldman, 2011). The information is translated into knowledge and then disseminated to inform crisis response decisions and actions (Myers, 2018).

Crisis management and higher education

As with many organizations, institutions of higher education have increasingly faced high impact crises (e.g. disease outbreaks, environmental disasters, active shooters, ethical breaches; Moerschell and Novak, 2020; Wang and Hutchins, 2011). The COVID-19 pandemic, though, has created an unprecedented situation, characterized as a turning point for higher education. Institutions have been required to develop new social and economic processes and norms through learning (Liu *et al.*, 2021a).

How higher education institutions function as learning organizations to adapt to this highly dynamic and threatening situation is not yet well understood. Although colleges and universities are in the business of educating, they are often characterized as resistant-to-change organizations that do not learn (Miller, 2021). High impact crises require shared decision-making involving internal and external stakeholders, as well as regulatory and state-level organizations (Myers, 2018; Liu *et al.*, 2021a). Although US higher educational institutions boast broad autonomy, they are also characterized as a compliance-based industry (Haneberg, 2021), not only dictated by external regulations but also by strong historical precedents and traditions. Furthermore, operations are largely regulated by dedicated systems (e.g. accreditation organizations) and state-level agencies. The tensions between internal and external stakeholders might have further affected leaders' ability to learn and ultimately manage the ongoing pandemic effectively.

Among the experienced and observed histories of organizations that can facilitate learning are crises (Elliott and Macpherson, 2010). Crises may provide organizations opportunities to re-evaluate core assumptions, processes, structures, plans, technologies and overall performance (Sellnow and Seeger, 2021; Ulmer, 2012). Learning is facilitated by a

willingness to re-examine assumptions and beliefs, conduct systematic critiques of responses and encode and communicate crisis lessons (Antonacopoulou and Sheaffer, 2014). Crisis managers may be reluctant, however, to examine core assumptions given the crisis-related disruption (Deverell, 2009; Veil, 2011; Miller, 2021; Smith and Elliott, 2007). Organizational learning during crises, therefore, may be limited to single loop or superficial learning rather than leading to more fundamental double-loop learning. Double-loop learning in the crisis context often requires the implementation of multiple single-loop learning, achieved through various processes involving environmental feedback and organizational procedures (Deverell, 2009; Veil, 2011; Veil, 2011).

Learning processes

Although there is an ongoing debate about specific conditions surrounding crisis learning (Deverell, 2009; Sellnow and Seeger, 2021) organizations typically engage with knowledge acquisition through a variety of post-crisis processes (Min, 2019; Russ, 2012; Wang, 2008). Huber (1991) identifies five processes through which organizations acquire knowledge. First, congenital knowledge processes involve the practices and procedures defined by the organizational goals and missions. Second, grafting involves new members who process knowledge. Third, searching includes environmental scanning and performance monitoring. Fourth, experiential learning may come from the organizations' prior experiences. Lastly, the vicarious learning process involves observation of others' successes or failures. In the literature, post-crisis scanning and performance monitoring are most often associated with crisis learning (Deverell, 2009; Sellnow and Seeger, 2021). In addition, the post-crisis phase may also involve experiential learning. We argue, however, that experiential and vicarious learning processes may also occur simultaneously. In the subsequent sections, we discuss experiential and vicarious learning processes in the context of crises.

Experiential learning from crisis

Direct learning typically occurs through an experiential process (Rerup and Feldman, 2011), though this can be costly during crises. Organizational failures, however, may promote more long-term learning than successful management experiences (Masden and Desai, 2010) because they function as experiential learning. Trial-and-error, ongoing process of organizational experimentation and assessment (Masden and Desai, 2010), is a form of experiential learning, requiring internal assessment and self-reflexive capacity (Sosna *et al.*, 2010). When organizations determine an activity failed to lead to desired outcomes, they may seek alternatives, through trial-and-error. Therefore, this approach is typically part of the post-crisis assessment. Through experience and experimentation, organizational leaders develop knowledge about which activities are likely to succeed, and then, they encode these activities into new routines (Haight and Marquardt, 2018; Rerup and Feldman, 2011).

Vicarious learning

Vicarious learning, the process of learning through observing others, (Min, 2019; Russ, 2012) may be less challenging than experiential learning. It is interest-driven, selective learning allowing similar organizations to gain knowledge of others' failures and successes without actually experiencing the event (Nathan and Kovoor-Misra, 2002). Organizations can bolster vicarious learning through environmental monitoring and comparing their operations and outcomes to others. The benefit of such learning largely depends on the interpretation of others' experiences through leaders' meaning-making processes (Myers, 2018). Studies suggest alliance with organizations of similar structures, markets and technologies and similar crisis histories provide a basis for vicarious learning (Moynihan, 2009; Myers, 2018).

Collaboration may help develop benchmark management practices and organizational cultures, facilitating vicarious learning.

Organizations tend to seek vicarious learning when internal or experiential knowledge is not available (Russ, 2012), but it is unclear how organizations do so during crises (Antonacopoulou and Sheaffer, 2014; Russ, 2012). Thus, we ask:

RQ1. What are the primary learning processes (e.g. experiential, vicarious) used by the US higher education institutions in their response to the COVID-19 pandemic?

Facilitating and impeding crisis learning

While crises can prompt severe disruptions in organization operations, crisis learning may be limited to single loop learning, rather than deeper double-loop learning (Haight and Marquardt, 2018; Myers, 2018; Smith and Elliott, 2007). Crisis learning, at all levels, may be inhibited by a variety of factors, including communication processes and organizational culture (Miller, 2021; Smith and Elliott, 2007; Vashdi *et al.*, 2019), which we explore next.

Communication and learning

Crises create uncertainty and disrupt meaning systems, making information acquisition and knowledge transfer essential to single-loop and double-loop learning during crises (Sellnow and Seeger, 2021; Canary and McPhee, 2010). Communication is used by crisis managers to create, maintain and change organizations; crises may create a context in which managers have more authority to initiate change (Walker, 2020).

The communicative practices used to manage crisis-induced uncertainty influences how organizations develop and learn. These practices are essential to collecting and moving information and lessons from one place, person or location of ownership to another (Van Den Hooff and De Ridder, 2004). Internal and external communication networks are important for acquiring and distributing information and lessons during crises (Moynihan, 2009). Communication processes help members understand what is happening and how to respond. Thus, systems that distribute information broadly versus narrowly may be more appropriate during crises. Crisis knowledge is also transferred through a variety of communication modes, some explicit (e.g. crisis training,) and others implicit (e.g. socialization into the organizational culture).

Culture and learning

In crisis management, organizational core beliefs and values are especially influential in meaning making (Liu *et al.*, 2021a). The value system created by culture is used by members, as they make decisions under the high uncertainty and threatening conditions of crises. Value systems influence crisis meaning and response. Cultures valuing innovation, flexibility and diversity of information and views may be better positioned to accommodate crisis-induced learning and change (Deverell and Olsson, 2010). In addition, crisis managers play a key role in interpreting new information and adjusting to the dynamics of the environment. Managers' negative perceptions about the willingness of stakeholders to accept significant change and embrace decisions may function as the barriers (Deverell and Olsson, 2010). Therefore, crisis managers may tend to engage themselves with symbolic or single-loop learning rather than the fundamental double-loop learning processes.

Organizational culture also encodes experiences, including experiences with crises, which are key determinants in organizational learning (Mitroff, 1988). In addition, the

lessons gained from crises often become part of the larger organizational culture. Taken together, we ask the following research questions:

RQ2. What factors facilitated the US higher education institutions' learning during the COVID-19 pandemic?

RQ3. What factors impeded the US higher education institutions from learning during the COVID-19 pandemic?

Method

To capture how the higher education leaders engaged in organizational learning during the COVID-19 pandemic, we conducted a series of interviews with leaders at 30 US institutions. We defined leaders as those who served on the institution's COVID-19 or crisis response team. To understand how the leaders learned during the first academic term of the pandemic, we conducted a total of 30 interviews in May 2020. To tap into additional learning processes occurring over the summer and into the early phases of the second pandemic semester, we conducted an additional 25 follow-up interviews in October 2020. From May to October 2020, we conducted 55 interviews with leaders from 30 US higher education institutions.

Participants

To secure interviews with a diverse group of higher education leaders during a crisis, we used a combination of snowball sampling and maximum variation. First, we developed a list of leaders through personal connections, securing half of our participants. The second half of our participants were secured based on recommendations provided by initial participants and by reaching out to leaders at institutions not already well represented in the first round of interviews using Suri's (2011) principle of maximum variation. We used The Carnegie Classification of Institutions of Higher Education (2020) system to find types of institutions (e.g. public or private) with varying enrollment sizes as a means to diversify our existing sample. Given several of the authors' roles as leaders at their own institutions, snowball sampling was the best way to secure initial contacts and using maximum variation allowed us to ensure a diverse sample. We reached out to a total of 137 institutions. All participants served on their institution's COVID-19 or crisis response team, and they all consented to study participation. Once the team's data collection reached data richness (Roy *et al.*, 2015), recruitment was halted.

To participate, interviewees needed to have a role in their institution's crisis response to COVID-19 (i.e. participation on *ad hoc* committees or on existing crisis teams). We interviewed a variety of Chancellors, Presidents, Vice Presidents, Provosts, Deans and Professors at a range of institution types (Table 1). Roughly two-thirds of our participants served at public institutions and the rest at private institutions.

Interviews

Prior to the initial interviews, participants completed a 22-question survey developed by the research team. This survey was largely used to understand more about participants, their institutions and their crisis management plans, in an easy and organized fashion. For instance, we found most of our participants served at institutions with preexisting crisis management plans and many of those plans included infectious disease outbreak plans.

Interviews were conducted and recorded via Zoom and professionally transcribed. The initial round of interviews each lasted from 20 to 61 minutes ($M = 46$ minutes). Follow-up

	Pseudonym	Institutional type	Title/position
1	Avery	PU – Doctoral Universities: Very High Research Activity	Vice President
2	Blake	PU – Associate's Colleges: Mixed Transfer/Career and Technical-Mixed Traditional/Nontraditional	Provost and President
3	Charlie	PU – Doctoral Universities: Very High Research Activity	Chief of Staff
4	Dakota	PU – Baccalaureate/Associate's Colleges: Mixed Baccalaureate/Associate's	Chief Officer
5	Jamie	PU – Doctoral Universities: Very High Research Activity	Executive Director
6	Emerson	PU – Doctoral Universities: Very High Research Activity	Director
7	Finley	PR – Doctoral Universities: High Research Activity	Director
8	Sidney	PU – Doctoral Universities: Very High Research Activity	Chancellor
9	Gracen	PR – Doctoral/Professional Universities	Vice President and Dean
10	Hayden	PU – Doctoral Universities: Very High Research Activity	Assistant Vice President
11	Jordan	PU – Doctoral Universities: Very High Research Activity	Associate Professor
12	Kelly	PU – Doctoral Universities: Very High Research Activity	Dean
13	Lee	PR – Doctoral Universities: High Research Activity	Professor
14	Alex	PU – Associate's Colleges: High Transfer-Mixed Traditional/Nontraditional	Executive Vice President
15	Lennon	PU – Doctoral Universities: Very High Research Activity	Chief of Staff
16	Gale	PU – Doctoral/Professional Universities	Dean
17	Morgan	PR – Master's Colleges and Universities: Larger Programs	Vice President
18	Nolan	PR – Doctoral Universities: High Research Activity	Executive Director
19	Owen	PU – Doctoral Universities: Very High Research Activity	Vice President
20	Parker	PU – Doctoral Universities: Very High Research Activity	Vice Chancellor
21a	Quinn	PU – Master's Colleges and Universities: Larger Programs	Executive Director
21b	Chris	PU – Master's Colleges and Universities: Larger Programs	Director
21c	Peyton	PU – Master's Colleges and Universities: Larger Programs	Director
22a	Riley	PU – Doctoral Universities: High Research Activity	President
22b	Jo	PU – Doctoral Universities: High Research Activity	Chief of Staff
23	Sam	PU – Doctoral Universities: High Research Activity	Provost and Vice President
24	Casey	PU – Doctoral Universities: Very High Research Activity	Associate Vice President
25	Taylor	PU – Doctoral Universities: Very High Research Activity	Professor and Vice Dean
26	Bailey	PU – Doctoral Universities: Very High Research Activity	Vice President
27	Drew	PR – Doctoral Universities: High Research Activity	Professor
28	Ezra	PU – Doctoral Universities: Very High Research Activity	Vice Chancellor
39	Shannon	PU – Master's Colleges and Universities: Larger Programs	Assistant Vice President
30a	Hunter	PR Doctoral Universities: Very High Research Activity	Chief of Staff
30b	Karter	PR Doctoral Universities: Very High Research Activity	Chief of Staff
30c	Phoenix	PR Doctoral Universities: Very High Research Activity	Director

Notes: This table includes participant numbers and their pseudonym, instructional type and role. Three institutions had multiple leaders as captured in the table with a, b and c notations. PU = public institution; PR = private institution

Table 1.
Participants' profiles

interviews (14–39 minutes; $M = 24$ minutes) probed key themes from the initial round of interviews and were conducted with leaders from 25 of the 30 original institutions three to ten weeks after the first interview, depending on availability. Leaders at five of the original 30 institutions declined to participate, so we were left with a final sample of 30 initial interviews and 25 follow-up interviews. Participants were assigned pseudonyms to protect

identity. Following the interviews, we established codes through a review of the literature and what emerged during inductive data analysis. The team collaborated to compare emerging themes, using NVivo and Atlas.ti to inductively and deductively code transcripts and using code memos (Gibbs, 2007). In addition to the following Lindlof and Taylor's (2011) guidance on inductive data analysis, we leaned on Boyatzis (1998) recommendations during coding:

- All coders had extensive knowledge regarding risk and crisis communication and comparable roles on the project to avoid single coder dominance.
- Prior to coding, coders read the interview transcripts several times independently.
- Coders coded the content into established and emerging categories and resolved disagreements through discussion.
- Subcategory themes were established by examining similarities and patterns in participants' responses.

Findings

The findings reveal the pivotal moment of COVID-19, requiring higher education leaders to quickly engage knowledge acquisition, primarily through experiential and vicarious processes. A summary of the findings is presented in the table below. Addressing the research questions, we discuss these findings further below (Table 2).

Primary learning processes *(RQ1)*

RQ1 examines the primary learning processes during the COVID-19 pandemic. Findings revealed two major processes adapted by higher education leaders, while responding to the COVID-19 pandemic. First, experiential learning consisted of learning from doing, feedback and external collaboration. Second, vicarious learning involved learning based on similarities and relevance and learning from exemplars.

Experiential learning

Learning from doing

Almost all participants claimed the pandemic created a new environment requiring constant reinvention responses. Leaders used trial-and-error processes to select and assess changes.

Table 2. Summary of key findings

Themes	Sub-themes
Experiential learning	Learning from doing
	Feedback
	External collaboration
Vicarious learning	Learning based on similarities, relevance
	Learning from exemplars
Facilitators of learning	Past crisis experience
	Other crises as wake-up calls
	Leadership team's expertise and experiences
Inhibitors of learning	Information overload, inconsistency, lack of information
	Lack of documentation, reflection
	Administrative structure, hierarchy

As Lennon mentioned, "we're in a big experiment right now to figure out how to do that well, along with all of our peers."

Assessment of changes allowed higher education institutions to develop knowledge about what was and was not working. Dakota stated:

> We did lots of things right as an institution, but there are places where we didn't do things as well, which was calling the incident response team together regularly and there wasn't great communication, so I wanted to learn and build on those lessons.

According to the leaders, learning from doing allows acceptance of the current reality. Charlie noted:

> When we stop for a minute, I know that we changed things on the fly a lot, but that was based on learning, it wasn't based on error. It's just new information that keeps coming in.

Feedback

Most participants discussed the importance of feedback from outside the leadership team in their learning processes. Feedback from monitoring social media, surveys and town hall meetings created connections to important stakeholders. Parker shared:

> The advisory team informs the campus council. The council, which has the president on it, decisions are made and then it's reinforced back through the chain, all the way back up through the system.

Feedback created opportunities to assess the effectiveness of response strategies and promote change to managing the pandemic through trial-and-error. This process was described by Charlie:

> We've had feedback about other universities that have come to us through Twitter, Facebook, where people are responding and saying, 'I wish my university would do this.' That's a confirmation.

Leaders acknowledged the limits to knowledge generated by feedback. Owen stated:

> The tension is you want to seek input and feedback from people, but the worry is that once you start soliciting feedback, people take that as gospel and start sharing it. When the goal was to try to work through the plan and then announce it so that it would reduce anxiety, but once rumors start it's really hard to pull that back.

The relationship between feedback and knowledge development and distribution, therefore, was complicated. Some participants sought to distribute information prior to a formalized plan, whereas others sought to wait until plans were completed.

External collaboration

Collaboration with external stakeholders (e.g. government officials, other academic institutions) was also described as an important part of learning. Over half of the participants noted collaboration can reduce the challenges of learning by generalizing lessons across institutional contexts. Sam stated:

> We need to do a better job of communicating and working together. We've had all these informal networks to do this but there's a lot of things where I'm sitting here thinking, "Why are we all reinventing the wheel?"

Participants suggested collaboration can occur formally by joining institutional and professional consortiums or through informal peer connections and sharing knowledge. Nolan exclaimed:

> So, there's regular communication among all of those colleges and universities [in our geographic area]. So it just gives us an opportunity for the presidents to talk with each other and just to better understand everybody is operating individually and on their own [. . .].

In this process, higher education associations and professional networks provided an opportunity to seek outside knowledge and compare responses.

Vicarious learning

Vicarious learning occurred as higher education leaders observed others' successes and failures through learning from similar and relevant institutions and learning from exemplar institutions. Participants also discussed the benefits to and challenges in vicarious learning.

Learning based on similarities and relevance

Learning from similar peer institutions allowed for an informal comparison and benchmarking, although leaders were sensitive to the basis of comparison. Dakota shared:

> Trying to find other institutions who have a similar composition would be helpful; in some ways, that matters more than what state they're in or what system they belong to.

Leaders considered several factors in selecting similar institutions, including geographic proximity, student populations or institutional types (i.e. public, private, mission-based). Morgan noted their institutional response was much different than that of an institution in a big metropolitan area. The utility of knowledge generated vicariously was evaluated based on the similarity of institutions as well as the context.

Multiple participants recognized the contingency of crisis management strategies were dependent on institutions' features (e.g. size, type, location). Leaders, such as Bailey, described how similarity was a factor in vicarious learning: "Our Big 10 counterparts were ones that we consulted with, the provosts, for instance, were consulting frequently."

Learning from exemplars

Findings suggested the response to COVID-19 was heavily influenced by exemplar institutions. Half of the participants indicated they followed schools they believed were doing extraordinarily well, including early decisions to migrate classes online. Lennon said, "There were a few schools that were out early on their actions, in part, because they were situated in places with emergent public health issues." Leaders relied on exemplary institutions that responded well in the early stages, in part because of a lack of national guidance. Some participants reviewed a specific university's plan and modeled their responses accordingly. Sam shared, "The way that [university] did their plan, broke it down, policies and procedures for people and for places. We thought, "Oh, that's a really good way to do this." We ended up structuring our plan very similarly. "These exemplar institutions inform responses. Because a wide range of options was available, it was relatively easy for leaders to find examples that best fit their contextual circumstances." As Parker claimed, "We're cherry-picking best in class."

Facilitators of learning *(RQ2)*

RQ2 aimed to understand facilitating factors to organizational learning during the COVID-19 pandemic, such as building on past crisis experience and speed of response, other crises as wake-up calls and the leadership team's expertise and experiences.

Past crisis experience

One third of participants said prior crisis management experience prompted vigilance in environmental monitoring. Leaders were able to engage in early planning as they scanned the situation. Charlie stated, "My radar was up as soon as I heard about Wuhan." Quinn pointed out that previous crisis responses, however, were not fully replicable for the COVID-19 pandemic, "We have had small responses to measles, chickenpox and those kinds of things, but nothing at the level of what we've been dealing with COVID-19."

While most of the leaders mentioned that COVID-19 is a once-in-a-lifetime event and they were shocked by the length and magnitude of the pandemic, some with prior crisis experience were unsurprised. In their view, crises are unavoidable. Although the nature of the COVID-19 pandemic was different, because of their prior crisis experience, a response system was already in place. These leaders were able to quickly activate an existing response system.

Other crises as wake-up calls

There were other crises occurring simultaneously as the pandemic, such as the Black Lives Matter (BLM) movement. In some cases, leaders discussed how the confluence influenced their COVID-19 responses. Quinn said:

> We developed a working group on inclusion and equity to look at how COVID-19 is disproportionately impacting some of our community members who are people of color. So, in the middle of all this, it's clear what happened to George Floyd impacted our campus and so our diversity and inclusion partners.

The BLM movement also expedited discussions during the pandemic, helping to recognize that institutional structures were not sufficiently diverse. Jordan shared:

> The tension between trying to manage COVID-19 and also thinking about the university's responsibility to marginalized groups is one the university has not been particularly forward-thinking about. There is currently a growing movement across social media platforms to require the university to make certain changes.

Multiple participants discussed the importance of developing heterogeneous knowledge by involving minority members in decision-making. Blake mentioned:

> We're going to have a panel on racism and diversity. I asked our other African American Dean to moderate it. We don't want a panel of white people talking about racism.

Panels such as these created opportunities to develop knowledge about racial injustice and translate that knowledge into lessons for change, such as inclusion of diverse voices in the COVID-19 response team.

Leadership team's expertise and experiences

About one third of the participants noted top leaders' expertise in public health and crisis management informed their responses. Expertise also informed searches for additional information and methods for information dissemination. Gale shared:

> The director of the health center, he's a doctor. A lot of information that he had was informative related to testing, social distancing, all those things that we're all needing to engage and plan for the future.

Specific expertise and knowledge also enhanced organizations' confidence in learning, as Hunter commented:

> It helps to have a provost who's a physician, an economist and the person who's helping to make a lot of these decisions and balancing health and safety concerns with academic admission concerns. That buys us a lot of credibility because he understands science and public health issues.

Leadership team members' academic backgrounds also allowed them to deal with COVID-19 specifically by interpreting relevant information and developing knowledge.

A few leaders emphasized the importance of acknowledging that decisions may change day to day. For example, Charlie said:

> This crisis taught me that in a time of fast changing things, it's okay to change your mind. I wish everybody would understand that, it's difficult to be in a leadership position making decisions, but you have to have the courage and the humility to say that decision was good for yesterday, but it's not good for today and we're going to do this because this is better.

Several participants suggested an organizational culture open to the presentation and communication of information, embracing innovation and adaptability, facilitates crisis learning.

Inhibitors of learning *(RQ3)*

Three themes about learning challenges emerged as a response to *RQ3*: information overload, inconsistency and lack of information, lack of documentation and reflection and administrative structure and hierarchy.

Information overload, inconsistency and lack of information

The volume of information received and the short response time were major challenges, according to many participants. Avery shared, "I felt like every 24 hours, there was more information, more data, more stuff coming out that we had to respond to." Similarly, Jordan added, Looking at entities, like the centers for disease control and prevention (CDC) or Johns Hopkins, there were informational discrepancies. I went back and forth.

In addition, inconsistent information, such as guidance from federal, state and local governments, created challenges to organizational learning. Gracen remarked:

> Every day, we have conflict because what the CDC says might be different from the World Health Organization, which is sometimes completely different than what the President of the United States says.

Inconsistencies, such as these, often impede the ability to develop the knowledge to inform subsequent crisis management decisions. In competing situations, the leaders adopted responses based on existing knowledge and mandatory guidelines developed by state and federal governments.

Lack of documentation and reflection

The short response time and volume of information created by the pandemic created additional challenges for documenting decisions and engaging in reflection. A few participants logged their decisions and analyzed their lessons learned. Participants believed

documentation and discussion of lessons learned were helpful for future responses. Parker said:

> We are talking about codifying the response that we had, so lessons learned are being integrated daily and this is probably going to form the basis for our future response to an integrated crisis.

Most participants, however, reported insufficient time for systematic analysis and codification. As such, deep or double-loop learning requiring fundamental change in existing policies might have been delayed. Drew noted, "Everything's on email. They've recorded a lot of the sessions. So, I don't think anything will be lost. I imagine when we're through this, there will be debriefings". Time constraints made simultaneous processing of information and responding to the crisis difficult.

About one-third of participants indicated during the time of data collection, they were still in the decision-making and action stages and could not yet reflect and organize lessons learned. Almost all of the participants, specifically those who were participating in a second-round interview, referenced the pandemic's duration as an impediment to learning. For instance, Emerson said:

> By now, in a normal event, we would have had an after-action meeting and produced a report for the lessons learned. We can't get there. This thing's gone on forever.

Several leaders, however, mentioned their response was a cumulative process where they continuously reviewed their actions and decisions and adapted new lessons. As Hayden stated:

> We have been keeping a log of lessons learned as we've gone along. At the end of each week and some weeks it might not have worked out, but at the end of each week, we have that discussion with the team and talk about things that we think should be built into or changed in how we operate and respond to emergencies.

Although a majority of the participants discussed the evolving nature of the pandemic and learning, they were unable to engage deeper or double-loop learning as it requires relatively more time and effort than was available. As Parker said:

> It remains to be seen in terms of infrastructure going forward. What will we do? Where will this type of work live? How are we investing in this for our community? I think those are questions we haven't been able to get to yet because of all of the disruptors that have happened.

Administrative structure and hierarchy

Many participants asserted decision-making was complicated and delayed because of complex administrative structures,(e.g. university system with multiple campuses). Dakota shared:

> We came up with a question. We know the answer and say, "This is what we want to do". We propose that to the system and say, "Here's what we want to pursue". The system says, "Great, we're going to share this idea with other campuses and they should do the same thing". Sometimes, we ask a question and say, "We don't know what to do". So, everyone's waiting for somebody else to do it or propose it first.

Multiple leaders at university systems, though, shared many of their decisions and responses were campus specific. Parker stated, "I represent a system of institutions. Three locations have completely different missions, governance, strategies and student constituencies."

In addition to structural complexities, leaders faced challenges dealing with administrative hierarchies. Alex said, "Managing the next layer in the organization was a challenge. I'm not sure we did the greatest we could've."

Discussion

Learning is essential to successful and sustainable organizational change (Weick and Quinn, 1999). During crises, learning is facilitated by recognition of serious deficiencies in the current system and impeded by the need to act quickly. The availability of internal and external resources, such as subject matter experts, networks, peer groups and communities, is crucial.

In regard to the primary processes used by the US colleges and universities to learn about the COVID-19 pandemic and cope with the massive disruption, institutions relied on experiential and vicarious learning. Because of time constructions and cognitive limitations, previous research shows organizations are resistant to learning during crises (Masden and Desai, 2010; Miller, 2021; Smith and Elliott, 2007) . Our study shows that during the COVID-19 pandemic, higher education leaders engaged in experiential learning through a trial-and-error process. Because consistent federal and state government guidance did not exist, leaders improvised guidance. In doing so, leaders actively solicited feedback from other higher education leaders and associations to develop knowledge about what was working and what needed to be modified. This occurred in a manner consistent with vicarious learning. Frequent conference calls and Zoom meetings with peer institutions and monitoring of exemplar institutions via media reports supported crisis decision-making through vicarious learning.

Equally instrumental to the learning process was the establishment of new systems for feedback from internal stakeholders, such as surveys and virtual town hall meetings, to better understand these stakeholders' needs and concerns. Some institutions recognized the co-occurring pandemics of COVID-19 and racial injustice, making deliberate choices to diversify representation on their crisis response teams to better address stakeholders' needs, based on prior research (Liu and Pompper, 2012). Leaders cautioned that soliciting feedback is a double-edged sword, as not all feedback is actionable yet may result in information leakage prior to establishing final responses. Though learning from stakeholder concerns is a best practice in crisis communication and in learning from crises (Liu *et al.*, 2021a), leaders must know how to prioritize concerns under conditions of high uncertainty. This involves assessing the quality and utility of information collected to inform learning.

Institutions likely were motivated to learn vicariously from others to protect the health of employees and students and, in part, to avoid the costs associated with experimentation and trial and error (Nathan and Kovoor-Misra, 2002; Vashdi *et al.*, 2019). The costs of experiential learning may be especially high during the threat and uncertainty of a crisis. Our study revealed who higher education leaders observed to enact vicarious learning and how they did so. Institutions observed two types of organizations: one, exemplar institutions made decisions in early stages and two, similar, peer institutions (i.e. geographic proximity, student populations, institutional types). Relying on exemplar institutions that had already made decisions, however, served as a challenge to vicarious learning. Engaging in vicarious learning with an open mind is paramount.

Much of the prior research conceptualized experiential and vicarious learning as two relatively distinct processes (Nathan and Kovoor-Misra, 2002). As noted earlier, though, leaders reported mutual sharing of experiences, knowledge, strategies, successes and failures within communities through formal and informal networks.

This created a context for connecting vicarious and experiential learning as leaders shared their experiences, received feedback and learned from others' experiences. The convergence of vicarious and experiential learning was facilitated by colleges and universities simultaneously experiencing the pandemic, in similar ways at the same time.

Our study suggested experiential and vicarious learning may support one another in important ways. Vicarious learning was useful as university leaders sought to determine peers' practices and assess their responses against others' responses. Peer groups were especially important during COVID-19 perhaps because of university practice and the culture of peer group comparison (Maitlis, 2005).

The second research question investigated factors facilitating organizational learning in higher education institutions' COVID-19 responses. Factors include development and use of connections, past crisis experience and leader and team member background and expertise.

As described earlier, personal and peer networks emerged and functioned as important resources for knowledge development supporting vicarious and experiential learning. Personal connections and peer groups were important in developing these networks as was environmental scanning.

The capacity to rapidly use connections and develop networks may be an important feature of crisis-induced learning (Haight and Marquardt, 2018). Some institutions took on important and visible roles as both sources of information and models for responses. This tendency to develop connections with institutions and the desire to use their practices as exemplars was likely exacerbated by the lack of consistent and clear guidance from other sources (e.g. the CDC). Subject matter expertise was also identified as an important resource for learning. Participants and key members of their pandemic response teams had backgrounds in medicine, epidemiology or public health. The prominence of university leaders with backgrounds in medicine and health likely enhanced the degree to which the pandemic was largely managed as a public health crisis, as opposed to an economic or organizational crisis. These backgrounds were seen as creating a useful capacity to interpret information and make decisions. Expertise in medicine and public health may also have helped universities recognize the seriousness of the threat and the potential for high rates of mortality and morbidity. Moreover, these backgrounds appear to increase credibility and confidence in decisions, which future research could examine.

Prior researchers argue that staff who experience crises store knowledge for future responses (Van Den Hooff and De Ridder, 2004), and our findings suggest retaining these employees is critical. Furthermore, it is important to turn the lessons from staff into operational practices through double-loop learning. This can address more fundamental issues of organizational norms, strategies and assumptions, through systematic restructuring and cultural changes (Argyris and Schon, 1996; Deverell, 2009). Leaders discuss some forms of double-loop learning, including a fundamental reconsideration of remote learning and the need to increase crisis management team diversity. This is noteworthy, given that higher education institutions generally change very slowly. Double-loop learning is most likely to occur in the post crisis stage. Leaders also emphasized the need to act quickly, though deeper-level learning, and change are needed for the long term.

Considerable challenges to learning in response to the pandemic were identified. These included a function of the specific crisis conditions and the features of colleges and universities. The pandemic created high levels of uncertainty, while simultaneously

creating information overload. Overload may be exacerbated by limited information processing capacity and the number and diversity of informational sources, among other factors (Netten and van Someren, 2011). Leaders cited the following challenges: the dynamic nature of the crisis, its longevity, the contracted time frame for responses and the continual onslaught of information from a variety of sources. These challenges created an intense need for leaders to process information into actionable knowledge, which exceeded their capacity.

At the same time, the lack of clear centralized guidance was an additional information deficiency. Communication is necessary to offset uncertainty (Sellnow and Seeger, 2021). Interestingly, leaders also observed that the dynamic nature of the event complicated the development and management of knowledge by limiting the capacity to reflect and document deliberations and decisions. Leaders indicated the necessity of time to reflect and process information that simply was not available during the rapidly changing conditions. Some leaders reported many deliberations and decisions were made or facilitated by email and that time permitting, there would be opportunities for more thoughtful considerations codified in ways that could facilitate distribution throughout the system. Such documentation and reflection may be needed for organizational learning. Designated staff and time may be needed to reflect the decisions and engage in structural and cultural organizational changes through double-loop learning (Argyris and Schon, 1996; Deverell, 2009; Vashdi *et al.*, 2019). The type of knowledge that is developed during crises may differ from the knowledge created after an event.

A final impediment to learning involved organizational structure. The university structure is generally bureaucratic, rigid and highly centralized and simultaneously highly decentralized in operations (Moerschell and Novak, 2020; Miller, 2021). These features appear to have slowed decisional processes, the creation of consensus around knowledge and the distribution of knowledge throughout the system. Organizational form, structure, values and culture are important factors in crisis learning (Miller, 2021; Smith and Elliott, 2007).

Implications and future directions

This analysis provides insights regarding crisis learning and suggests future directions and implications for researchers and practitioners. The scale and threat of the COVID-19 pandemic disruption for colleges and universities was significant. Consequently, leaders were forced to quickly search for information while generating lessons and change. Understanding the specific features of crises, such as event scale can help leverage crisis-induced learning and change. In addition, investigation exploring learning throughout the stages of the crisis life cycle may provide additional insights into double-loop and single-loop learning. The current analysis suggests that during the early stages of the pandemic, most learning was single loop. Further analysis should explore learning in the post-crisis state. Will colleges and universities revert to previous methods of operation, or will there be deeper level change and will those changes be associated with some types of colleges over others? For example, how will some institutions develop structures and protocols that facilitate increased stakeholder involvement in deliberation, while still responding to the time-sensitive exigencies of future crises? How will some institutions continue to foster the peer networks they developed during the pandemic so that vicarious learning continues during future crisis and non-crisis times? A final area for future inquiry concerns crisis and culture. How will the sustained and disruptive impact of COVID-19 impact organizational culture?

This analysis also suggests that practitioners and crisis leaders should view learning as an integral part of the crisis management process and plan accordingly. Crisis responses can be viewed as a form of rapid organizational learning, under conditions of threat and uncertainty. Crisis planning does not generally include organizational learning as part of the system of response contingencies. Planning should take into account learning, possible sources of information, procedures for experiential and vicarious learning and methods of distributing lessons to internal and external stakeholders. Practitioners can actively engage in experiential and vicarious learning, by developing and activating networks for effective responses before and during crises. Practitioners can also identify and use their institution and staff's expertise and past experience in their responses.

Limitations

Our conclusions should be interpreted with the knowledge that our sample was limited to the US higher education leaders and the research was conducted during an ongoing pandemic. This project was guided by the lens of communication and crisis-induced learning. Other perspectives, such as crises management models as the analytical framework, would likely yield different results (Wang and Hutchins, 2011). Inquiry involving institutions from different countries and facing different threats may reveal other cultural and contextual factors in learning, especially given that the pandemic has had a global impact. Moreover, leaders may have felt as though they needed to work to maintain their institutions' reputations through filtered responses despite the informed consent process detailing that their data would be kept confidential. Finally, in many cases, leaders expressed stress, lack of time and uncertainty, perhaps influencing their responses.

Conclusions

The COVID-19 pandemic has changed higher education in fundamental ways, forcing new forms of instructional delivery, protocols for safety and compliance and organizational learning. This investigation illustrates how crises prompt organizational learning, while demonstrating the critical role of internal and external resources in the learning process. Vicarious and experiential learning functioned in a coordinated manner, facilitated by a crisis that impacted the entire industry. Despite a number of learning challenges, including the absence of clear governmental guidance, leaders constructed systems of information acquisition and learning. Moreover, this analysis describes the process by which decisions, actions and strategies emerged during an actual crisis. Ultimately, crisis management needs to integrate learning more fully as planning and response strategies.

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Further reading

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