Preparation for the next pandemic: adopt, adapt or improve?

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Keywords · Pandemic · Adopt · Adapt · Improve · COVID-19 · Personal protective equipment · Online meeting · Collaboration · Crowdsourcing · Simulations · Outdoor learning · Environmental · Adventure programs.

Abstract

This article offers the risky proposition of forecasting the future. The often paraphrased quote of Peter Drucker, famous European management guru, applies here. He was fond of pointing out how predicting the future can be likened to driving backwards down a dark and isolated country road at night with no lights, while looking out the back window via the rear view mirror. Instead, his wisdom suggested inventing the very future we want. We had best start now. Despite COVID-19 persisting in many countries, this article shares tactics from several strategic approaches to preparing for the next pandemic: accept the current practices (adopt), modify to suit new conditions (adapt), or find a different and better way (improve). The author favours improve.

Introduction

A recent article in this journal (Quay et al., 2020) took a look at how outdoor programs were coping with the COVID-19 pandemic during its early stages. Many excellent programmatic variations were shared, including: visiting environments closer to home, field tripping and planning from a separated distance, merging with indigenous principles, spiritual connections to nature, and the inevitable migration to virtual school and online learning. Somehow, most educators managed to make the clumsy jump to web conferencing in place of face-to-face classrooms. Aside from
program closure (Buonsenso et al., 2021), other organizations implemented a variety of response strategies ranging from regular infection testing of staff or decontaminating of sites, through going online or outdoors with clients, to masking or distancing measures among clients (Fedele et al., 2021; Freeman et al., 2021). Nevertheless, while nature enjoyed a brief respite from the crowds (McNeely, 2021), the global “lock down” devastated national economies, regional markets, and local events (McKibbin & Fernando, 2020).

Outdoor programs also suffered greatly. For example, out of 34 programs polled in America, 14 closed down, 13 laid off some staff, and only half of the remaining seven programs kept staff at full capacity (Mitten et al., 2020). A minority of these 34 programs were ten Outdoor Behavioral Healthcare companies offering adventure or wilderness therapy and persisting because they were able to “shift right” (coined by M. Gass, personal communication, June 1, 2020). Shift right is the handle for a movement along the programming continuum away from large groups in short term recreational programs (designed to change feelings) and toward therapy programs (intended to address maladaptive behaviors, resolve trauma, and reduce resistance to change). In the latter therapy, small intact groups spent longer periods of time in remote locations. This shift right effectively meant that their operations took place in fully isolated quarantines.

In Britain, a series of detailed reports demonstrated widespread negative impacts on outdoor learning in the education sector, for residential providers, and on organizations and their professionals (Institute of Outdoor Learning, 2020). In Italy, during the worst of their pandemic lock down, a survey of nature-based programming (outdoor, adventure, and environmental, across recreation, education, development, and therapy fields) showed the potential for lasting social and economic shock due to the lock down (Borelli et al., 2020).

If “shelter-in-place” restrictions continued to the end of 2020 in the United States, 63% of almost 1,000 environmental education and outdoor science schools were uncertain about whether they would ever open their doors again. About a third of these were expecting to close permanently due to the double whammy of a pandemic and severely reduced funding due to lost revenue (Collins et al., 2020).

By the time of writing, mid-2021, the pandemic seemed to be coming under control with schools and businesses poised to reopen in North America (Kaufman et al., 2021; O’Donoghue et al., 2021). The value of education outdoors was made obvious by several authors who pointed to lower transmission rates outside versus inside (Cowe & Danks, 2021; Grossman, 2020). Outdoor learning was quickly compared with distance/online learning, the latter greatly exaggerating socio-economic inequities in educational systems (Iyer & Chapman, 2021). Many students lacked access to devices or computers and reliable broadband Internet (Domina et al., 2021). The experiment failed as some students simply didn’t show up for learning (Santibañez & Guarino, 2021). The alternative of no schooling at all due to a total closure would further delay learning, compound injustices, and disproportionately impact many already disadvantaged children (Armitage & Nellums, 2020).

During the fall of 2020, New York City schools had half of their 1,600 public schools operating outdoors, many with an environmental or “green” instructional focus (Day, 2021). Canadian professors called for a move to outdoor classrooms.
at the same time (Ayotte-Beaudet et al., 2020). California attempted to revive its outdoor education programs, but the final outcomes still remain to be seen (Johnson, 2020). Britain highlighted the importance of the outdoors and natural world to get their youth back on track for opening school learning and entering the important employment market (Outward Bound Trust, 2020).

One of the under-discussed and critical points in all of these countries is that outdoor adventure and environmental programs provide the very qualities that people lacked most during their respective national restrictions. People, living alone and unable to interact anywhere but online, will experience underdeveloped interpersonal relationships and prosocial skills (Lee, 2020; Cameron & Tenenbaum, 2021). People living a sedentary indoor existence for their learning and work will suffer from decreased fitness and increased obesity (Wahl-Alexander & Camic, 2021). All can benefit from reconnecting with the spiritual and restorative properties of nature (White et al., 2013).

Although this news was encouraging, it emphasized responses designed in a reactionary way to cope with the significant challenges of living in the midst of a pandemic. But we know that this pandemic won’t be the last. What happens when the next pandemic comes along? What can we learn from this pandemic? This novel coronavirus was easily the 250th epidemic/pandemic to hit the planet in recorded history (Huremović, 2019). It was by no means the worst. It ranked only eighth on the long list of fatal impacts (LePan, 2020). Based on the last 2,500 years of this past, our future will continue to experience worsening pandemics, even though the COVID-19 crisis is still not resolved in many nations.

Keep calm and carry on won’t suffice when the next one hits. A more preferred motto, from the British Round Table Club, as inspired by Prince Edward of Wales in 1927, and made famous by a Monty Python sketch about failure, is adopt, adapt, and improve (Round Table International, 2021). Adopt refers to accepting proven practices and applying them without modification. Adapt involves modifying methods to perform practice differently according to the current situation. Improve means finding a better way to deliver practice that is impervious to the current situation. How will we adopt, adapt, and improve?

**Adopt**

When a program chooses to adopt, it decides to accept, follow and apply common practices to prevent disease transmission. Six routes of transmission and their respective practices to reduce transmission of these pathogens are found in Table 1 (Center for Food Security & Public Health, n.d). Staff will need health education to understand and mitigate the impact of these routes and additional training in how to help clients process their anxieties around what they experience during a pandemic.

If a program chooses to employ Personal Protective Equipment (PPE) such as masks, gowns, gloves, and face shields or goggles, or if it applies distancing among people, then it loses the advantage of building trust from touch. Trust does not form easily without personal touch. A study of 12 groups undergoing three treatment conditions (no-touch, touch through objects, and human touch) during one day of team-
building initiatives, found that physical contact positively and significantly impacted team members’ development of trust. Touch was determined to be a necessary and important antecedent to trust development in teams (Reina, 1995).

Touch conveys emotions more powerfully than language, tranquilizes after stress, and enhances trust (Reina, 1995). What will we do if we can’t touch? How will we replace developing trust in our programs? While most trust-building activities without touch are designed for virtual teams (Clark et al., 2010), one promising option is the social dilemma: a simulation where the best interest of the individuals normally outweigh the needs of the group, but individuals forgo their best interests so the group can benefit (Bos et al., 2002). In other words, if you only look out for yourself, everyone loses.

| ROUTE | EXPLANATION | TRANSMISSION REDUCTION |
|-------|-------------|------------------------|
| Air   | breathing of droplets or aerosolized germs released in a sneeze, cough, shout, yawn, song, sigh, cry, snore, burp, hiccup, laugh, or exhaled breath | surgical masks reduce germ exit, but not entry and N95 respirator masks reduce entry up to 95%, but still not perfect (distancing also reduces transmission by air route) |
| Reproduction | infected tissues or fluids shared during sex | condoms to prevent exchange of fluids |
| Contact | infected tissues or fluids directly contact open wounds, abraded or scratched skin and mucous membranes (eyes, nose, mouth) | a gown to cover open wounds or abraded or scratched skin and a face shield to protect mucous membranes (or Hazardous Materials Suit) |
| Fomite | touch contaminated objects or surfaces, and then touch self (usually requires direct contact with mucous membranes) | frequent sanitizer or hand washing to kill germs and gloves to prevent contact, but must still avoid touching infected gloves to skin or membranes |
| Ingestion | contaminated food or water is eaten, chewed or licked | decontaminate food or water by chemical, temperature, ultraviolet, or filtration |
| Injection | shared medical devices or needles and vector or insect bites (flea, tick, mosquito) | sterilize medical devices or needles and repel or remove insects |
Adapt

When a program chooses to adapt, it decides to modify or adjust its methods and procedures to suit the new conditions of an infectious disease. Going online to deliver programs was one immediate response tried by many. By utilizing web conferencing software, staff and participants were able to see by video, listen by audio, exchange questions and answers by chat and distribute instructions, lessons, and information by screen sharing. These were the mainstay functions of most web conferencing applications and services like Zoom, ConnectWise, Blue Jeans, Teams, Meet, WebEx, and GoToMeeting (TrustRadius, 2021). In addition, some of these applications incorporate tools such as interactive whiteboard (to share drawing and editing of drawings), co-browsing (to share surfing on the same webpage allowing for virtual field trips), breakout rooms (permitting sub-groups to meet and work in private before reporting back to the entire group), polling (letting attendees vote on topics with values or dichotomous answers), and feedback buttons (for expressing emotions, communicating agreement, raising a hand to ask questions, and modifying speed).

Going online has been an option and opportunity for learning for the past three decades, and the virtual technologies continue to improve. Some of the earliest recognized benefits of going online include: improved access for geographically remote clients (Appana, 2008), ease of access for the independent or self-regulating learner (You & Kang, 2014), availability at all hours (Chaney, 2001), customized to the learner’s needs (Kirtman, 2009), and facilitating the experiential interaction of learner to peers, learner to teacher, and learner to subject matter content (Savenye, 2005). Further to the last benefit, virtual teaming was a major preparation factor for learners expecting to work in world where global communications continue to increase and consistently go online (Kim et al., 2005).

Operating on the fringe from 1997, an early start-up company offered experiential virtual teaming programs and their methods became mainstream two decades later (virtualteamworks.com, 2021). Their digital initiatives were substituted for adventure activities to replace the face-to-face challenges (Chen, 2012; Priest, 2000). These were initially thought by the profession to be ineffective, because body language and vocal intonation can be difficult to interpret in online settings and this can causally lead to miscommunications and facilitation errors (Chen, 2012, 2021). Nevertheless, electronic facilitators developed new techniques for reading body language by video and vocal intonations by audio to partially begin preventing and compensating for these mistakes (Chen, 2021; Priest, 2005).

However, in the near future, we can reasonably expect that artificial intelligences will be developed to fill many of these gaps. Computers can already identify who is not participating and who is talking over others in online discussions. New developments in this arena have begun to discern expressed emotions and underlying moods from voice analysis (Empath, 2021; Oto, 2021). We are on the verge of using machine learning to identify mental and physical well-being from body (Hinge Health, 2022) or facial language (Barrett, 2020). Not far off is the ability to measure program impact and provide coaching feedback to clients using deep learning, thus removing the need for human facilitation by passing this role to the artificial intelligence (Grossmann & Schermuly, 2020). Responding to interaction with the technol-
ogy, client performance will be assessed, trained for improvement, and re-assessed leading to personal growth.

**Improve**

When a program chooses to improve, it decides to enhance its methods and make its delivery systems better by a different process or design that cannot be easily derailed by a pandemic. The main response to a pandemic means typically keeping groups intact: the same people live, work and play together, without allowing others to enter their “bubbles.” Therefore, to prevent cross infections, any improvement must keep facilitators away from intact groups (as with online meetings) or embed them as part of the group for the quarantine period found in long programs (as with shifted right). However, other improvements are also possible. Consider these three: prepare frontline professionals, co-create a future of collaborative crowdsourcing, and use simulations.

First, we identify all the teachers, social workers, and corporate trainers, who are already embedded with their classrooms, youth groups, and work teams. These frontline professionals, especially those previously unaware or unfamiliar with experiential methods, will be prepared in these procedures to deliver and debrief their own programs. In this way, client groups can remain intact as they normally would be in school, within the community, and at work, but without the need for an outside facilitator to join and possibly transmit infection in or out of the bubble. With this improvement, service providers can attend to program design or delivery in close partnership with a frontline professional and move to the role of consultants conducting teach-the-teacher, work-the-social-worker, and train-the-trainer sessions. Imagine a world where everyone participates in experiential learning, environmental studies, and outdoor adventures as a regular component of daily life.

Second, we co-create the future we want. To do this, we are going to need to stop competing and move beyond cooperation to collaboration. Too many of us perceive other operators in our markets as competitors. This comes from the mistaken belief that slices of the pie are limited. If our profession continues to focus mainly on competing with one another, we will end up stagnated, distracted, and left behind, because someone else outside the profession is going to invent the next best thing and pass us by. Cooperation is not enough; we will need to collaborate. In *cooperation*, we conditionally share information and resources, while remaining independent and seeking to benefit ourselves and maybe others. The best we can hope for with cooperation is a disruption of the status quo. However, with *collaboration*, we unconditionally share everything by working together cohesively for the mutual benefit of all. Since a rising tide lifts all boats, here we can achieve synergy and invent something new that surpasses the status quo and creates the future we desire. One key to effective collaboration in our profession or industry lies in open *crowdsourcing*: drawing on ideas and contributions from a large mass of people to solve a problem or complete a task through the Internet.

Although collaborative crowdsourcing has yet to happen on any widespread basis for our profession, a few related examples exist. Without technology, crowdsourc-
ing has been used extensively by several associations to set program accreditation standards, identify best practices, and agree on definitions. In an effort to spark radical ideas for university reform, advance economic development and deepen social justice, the GovLab convened internationally-renowned pedagogues, researchers, entrepreneurs, and university leaders to brainstorm new innovations and explore questions of equity in experiential learning in higher education (The GovLab, 2021). Collaborative crowdsourcing via social media has been used for decades to support pro-environmental activism at the grassroots level (Massung et al., 2013). Free smart phone apps allow the user to photograph or describe an unknown flower or unfamiliar bird and have members of a world-wide community contribute to the species identification (Potraz, 2014). Appreciative inquiry is a solution-focused and affirmative approach to building on known strengths and a collaborative technique for improving innovation and positivity in organizations. It can also be used as one crowdsourced method to generate new ideals and dreams of a fresh, bold future (Cooperrider & Srivastva, 1987). Collaborative crowdsourcing should be employed by our profession to innovate new methods and approaches. By way of illustration, the Outdoor Council of Canada is now crowdsourcing collective statements regarding benefits, leadership, management, education, and diversity for the industry through technology and an in-person summit conference (Canadian Outdoor Summit, 2021).

Third, we add simulations and recent technology to improve online and in-person events. While this will not be the solution for all programming, it will address some of the concerns noted earlier about facilitating online. By utilizing simulations, the facilitator doesn’t need to be in the presence of clients. Simulations can range from apps on a laptop, through augmented reality on a smart phone or tablet, to virtual reality with specialized goggles. Ecological science apps and games abound (Common Sense Education, 2021). For example, a variety of virtual lab simulations teach science concepts and practices (Beakers and Ink, 2020). Body cameras can be worn by students and can highlight positive actions or point out areas that need improving after group viewing of compiled recordings. Augmented reality is viewed through the camera of the smart phone or tablet with surrounding information added in. Today, we can point our devices at an object on a heritage interpretation trail and have everything about that object identified for our reading and learning pleasure. Imagine sweeping your device across an ecosystem and having all the plants and animals identified on the spot along with descriptions of the relationships among them. Virtual reality involves looking into goggles to experience a computer generated visual environment, while other senses can supplement the experience via headphones or motion treadmills. Reacting to seemingly dangerous situations, but without real risks, makes for truly virtual adventures (de-Juan-Ripoll et al., 2020).

Excluding violent first person shooter games, where players see the gory results of armed combat through the eyes of their avatar, most of the gaming-style simulations are replications of group initiatives typically used in adventure programs. For example, “I Expect You to Die” is a virtual reality adventure game where one plays the role of a spy and must escape a series of life threatening situations using self-intellect, problem solving talents, and objects in the room, before time runs out (Schell Games, 2021). “Keep Talking and Nobody Explodes” is a team-building simulation where dispersed group members communicate online to share information about how to
defuse bombs (Steel Crate Games, Inc., 2018). Simulators exist for rock climbing, Everest mountaineering, caving, and whitewater paddling. Not to be outdone, the United Nations Environmental Programme has developed a virtual reality climate change simulator for experiencing and modifying one’s own carbon footprint (UNEP, 2020).

One recent example involves a simple smartphone app that allows teachers to conduct treasure hunts with comparative route selections, as based on geocaching: searching for hidden “treasures” with a GPS Receiver (Michalakis et al., 2020). The RouteQuizer enables teachers to create activities with routes, where students can select and follow routes on their own, while participating in the activities, and for teachers to receive feedback on their students’ performances on route. In addition, quiz questions can be added at each of the locations visited and correct answers can contribute to the next leg of the journey by being incorporated into the heading, distance, or clue related to the next treasure.

For over twenty years, geoteaming.com has been conducting team-building events through the use of technology and competitive/cooperative GPS scavenger hunts in collaboration with geocaching.com and Groundspeak. The originator of this exceptional modality, geoteaming.com has now branched out into numerous gamification simulations. These range from digital escape rooms, through amazing georaces, to virtual team-building (geoteaming.com, 2021). Each entirely online program is accompanied by a unique smartphone app that is customized to the client and that directs them through the experience. Additional technology is used to communicate and record the events for posterity and reflection.

In-person simulations improve on group initiatives, while retaining much of the social interaction and personal challenge of adventure without the natural consequences. However, online simulations suffer from the same shortcomings already mentioned in adopt and adapt: the absence of touch, the missing body language cues, and the loss of vocal intonation. While incorporating good audio and video into the simulation can partially improve body language observations and vocal intonation scrutiny, touch is much more difficult to reconcile in a virtual setting. A small amount of marketing research has identified the need to touch objects as a necessary prerequisite to their online purchase (Van Kerrebroeck et al., 2017). These haptic studies have demonstrated that consumers draw upon: the motivation to touch, customer reviews (Flavián et al., 2016), mood, purchase price, and product information to a greater extent when physical touch is not possible (Yazdanparast & Spears, 2013). Studies to develop models of touch and build these into artificial intelligence are just beginning (Soh & Demiris, 2014). Until we are able to address the shortcomings of absent touch through technology, we should conduct additional research into its role in outdoor prosocial skill development.

Conclusions

In thinking about and preparing for future pandemics, programs have a choice to adopt, adapt and/or improve the ways they operate. The program that adopts Personal Protective Equipment to prevent possible transmission of infectious diseases runs the
risk of avoiding personal touch. Without touch, trust is difficult to build and without trust, other teamwork skills will not grow. Adoption becomes a short term response.

The program that *adapts* to online events rather than face-to-face ones will forgo the important clues of body language and sometimes vocal intonation. Without these clues, facilitators and other clients can misread communications. Miscommunications will hamper the growth of interpersonal or social and of intrapersonal or self-development skills. However, pending improvements in technology may soon eliminate these concerns, but at a cost of dehumanizing our work. Adaption is a middle term response.

The program that *improves* has a number of choices ranging from preparing frontline professionals, through co-creating via collaborative crowdsourcing, to adding simulations with augmented and virtual realities. Technology becomes ubiquitous in these options, but improvements are long term responses.

Programme designers may wish to consider investing in new software development and online programming as soon as possible, but one important caveat to the use of technology is avoiding a reliance that separates the client from the natural world (Beames, 2017). These tools are a “double edged sword” that provide valuable augmentation to outdoor programming, but at the cost of distancing the client from others, nature, and sometimes themselves (Cuthbertson et al., 2004). Technology only becomes a replacement necessity once the next pandemic lock down leaves no other available options. The author does not mean to imply that technology be used to replace all in-person learning in the future.

Over one hundred years ago, John Dewey, the grandparent of experiential learning, wrote that “the challenge of education is to prepare students for their future, not our past...[and]...if we teach today as we taught yesterday, then we rob our children of tomorrow” (1916, p.167). Therefore, we must change what we do to keep pace with the 21st century and to be ready for the next pandemic. Based on past experience and interviews with programme leaders and designers in about 30 countries around the world, the author predicts that most will choose to adopt, some will choose to adapt, and a few will choose to improve, but a substantial number may do nothing, choosing to wait or deny, and therefore fail to be around the next time we prepare to survive a pandemic. Which will you choose?

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