

Are Conferences Changing?

Tony Carr

University of Cape Town, South Africa

University of Oslo, Norway

ABSTRACT

Conference participation and presentation are core practices in research and professional communities. For individual participants they are places to learn about and share recent research findings and emerging practices, and to meet and network with colleagues. Extensive lockdowns during the COVID-19 pandemic meant that formerly face-to-face conferences had to rapidly move online, resulting in the development of hastily designed emergency remote conferences which were mostly unable to benefit from the knowledge held by organisers and researchers of pre-pandemic online conferences. As a result, many online conferences from 2020 were unable to make creative and effective use of readily available technologies to support the full range of formal and informal interactions needed to support participant and community level learning experiences during the conference. This article discusses this phenomenon and also describes a range of more creative and flexible online conference designs from the pandemic period that look well beyond the emergency remote conference.

Keywords: *Online conferences; emergency remote conferences; learning; research conferences; professional conferences; online conference design; pandemic*

INTRODUCTION

Conference participation and presentation are core practices in research and professional communities. For individual participants they are places to learn about and share recent research findings and emerging practices, and to meet and network with colleagues. Over time conference designers have placed increasing emphasis on the conference experience including opportunities for networking and social interaction, support for reflective learning, participant initiated conversations and events which support experiential learning. The stereotype of a conference as a conveyor belt of keynotes and parallel tracks of short presentations with limited time allowed for discussion is being slowly eroded. An overt focus on participant learning has often not been built into the design. It is simply assumed that participants will learn as a consequence of exchange of information.

The introduction of lockdowns, including severe travel restrictions by most countries at the start of the COVID-19 pandemic, challenged the survival of even the most well established face to face conferences. Conference organisers mostly rushed online to produce emergency remote conferences which kept the formal interactions of the face to face conference but provided a very constrained social and networking experience for participants. The scale and urgency of the shift online meant that the new online conference organisers often lacked the time or knowledge to draw on the existing literature about online conference design. It seems that the design of pandemic era online conferences was mostly focused on a constrained set of essential elements of face to face conferences as perceived by conference organisers. Starting in 2020 there were also many examples of online conferences which were better designed for engaging conference experiences. Where meeting processes designed for face to face settings were thoughtfully reconfigured for online engagement the conferences gained in international reach and scale. These reconfigured

conferences also supported networking and learning within, and sometimes beyond the temporary communities of participants.

Niner, Johari, Meyer & Wasserman, assert that the "the forcing hand of COVID-19 has opened an opportunity to trial online formats and to reinvent conferences as a core institution of research and practice" (2020, p. 253) and 2020 became the year of online conferences and more specifically of the emergency remote conference. Many well established face-to-face conferences rapidly went online as the COVID-19 pandemic reconfigured the notion of when and how researchers and professionals meet to learn from and with each other. This reconfiguration was patchy and incomplete because the most typical emergency remote conference designs tended to preserve the formal presentation sessions while giving limited attention to the design of the networking and social interaction spaces and processes which are core to the "normal" face to face conference experience. The proliferation of online conferences raises several issues, including the range of online conference designs used, how these relate to good design practices for conferences in general, and how they relate to good design practices for online events for multiple purposes which include events for research communities but extend beyond these to include events with an overt focus on learning within communities and networks of professionals. While my research on online conference design is driven by an interest in the design of conferences for professional development it seems that most of the literature on the design of online conferences during the pandemic is focused on academic conferences (which are also often referred to as scholarly, scientific or research conferences). The overarching question here about whether and how the pandemic has changed conferences, becomes a container for a cluster of related questions which will be used to structure this article including:

1. What are the roles of conferences?
2. Why should conferences change?
3. How have face to face conferences changed?
4. How have online conferences changed conferences?
5. How have online conferences changed during the pandemic?
6. Why should online conferences continue to be held after the pandemic?

METHODOLOGY

This article draws on and extends an existing literature review (Carr 2016) concerning generic issues of conference design and changes in the nature and experience of online conferences before the pandemic. This is then extended to include articles about conferences as learning events, and articles from the growing niche literature published during the pandemic about online conferences. The literature cited will mostly focus on the opportunities for redesign of academic or research conferences. From the standpoint of an experienced designer and organiser of several online conferences I will also offer some observations and reflections concerning two online conferences held in 2020 which incorporate design elements that could fruitfully challenge prevalent online designs for academic and professional development conferences. It is possible that the creativity and flexibility of the designs featured is facilitated by their locations at the interface of research and practitioner conversations, or as spaces for conversations about issues of shared interest within diverse landscapes of practice (Wenger-Trayner, Fenton-O'Creevy, Hutchinson, Kubiak, & Wenger-Trayner 2014).

What are the roles of conferences?

To answer this question we need to consider the role that conferences play in the ecosystems of researchers and professionals and whether conventional conference designs are able to perform these functions effectively. Conference attendance is integral to academic culture (Decuyper &

Simons 2019). From the late 20th century the functioning and growth of research communities has both fuelled and depended on a proliferation of circuits of national and international generalist and specialist face to face conferences where researchers network and present and discuss work in progress as well as emerging directions for future research. This has in turn given rise to an ecosystem of consultants and businesses who service and organise face to face conferences of varied usefulness to their target markets. It is not clear though that the standard conference is able to do this well.

Conferences have multiple purposes including profiling new research, emerging practices, tools and approaches; facilitating networking among participants and providing opportunities for participants to locate themselves within the ecosystem of a scientific or professional community. Ruediger & Cooper (2021, p. 3-4) refer to multiple functions of the annual meetings of scholarly societies including convening important conversations, influencing research agendas, shaping “pedagogical and professional issues within disciplines and disciplinary communities”, exercising governance, gathering “feedback and ideas from members” and “identifying future leadership”. They also suggest that “annual meetings offer the chance for entire disciplines and fields of inquiry to gather in ways that run counter to the hyper-specialization that characterizes much of academic life”.

Conferences as Learning Events

The roles and design of conferences as learning events feature in a growing niche literature. We are all familiar with conferences which rely heavily on one way communication in the formal sessions. Unfortunately the economics of large conferences may favour several parallel tracks of short presentations with too little time allowed for engagement in reflective conversation. Ravn & Elsborg (2007, p.3) asserted that " While there has been extensive experimentation pretty much everywhere else in the educational world, the conference, seen as a forum for learning, still pegs the learner in the role of passive receiver of information."

There are some differences between what learning looks like in academic conferences with a far more overt focus on presentation and dissemination of research (Lortie 2020; Mader, Zimmermann, Diethart & Mulà 2020) within a research community, and professional conferences with a more overt focus on the professional development of their participants (Grissom 1992; King 2017) and the application of research within and sometimes across communities of practice. Consequently professional conferences may offer more scope for experiential learning processes including workshops, and scheduled opportunities for participant initiated conversations. Some professional conferences may even have an overt focus on training sessions designed for a curriculum based on tightly specified professional standards.

The boundaries between research and professional conferences are not always sharply defined. Professionals in fields such as educational technology may have hybrid identities as both researchers and practitioners. There are also differences between research disciplines with excellent opportunities to make use of demonstrations and exhibits during design and arts based disciplines (Verbeke 2015). This implies that the overt design of learning spaces and processes needs to be driven by the specific purposes and context of each conference. The traditional research conference design focused on parallel tracks of shorter presentations with limited discussion time has persisted as the core feature of even most reconfigured research and professional conferences, despite a growing body of niche literature dating back to at least the 1970s, about useful ways to redesign research conferences to support learning by their participants (Elton 1973, Hubbard 1976). There is scope for misalignment here such as a professional conference which may adopt a legacy research conference format and design; however the archetypical research conference may exemplify a more generic misalignment between the learning needs of participants, and the limited affordances of these conferences as learning spaces

beyond exchange of information. The literature cited below offers several approaches to redesign conferences to support learning.

Some of the key features discussed by proponents of designing research and professional conferences as learning events include the importance of conversational and reflective spaces for deep peer learning (Sweeting & Hohl 2015; Verbeke 2015; Walker 2008); the limited evidence shared in the literature for the full value created by research conferences for the work done by academics (Spilker, Prinsen & Kalz 2020); the multifaceted learning at research conferences by postgraduate students (Campbell, Wick, Marcus, Dool & Hammack 2021; Kuzhabekova & Temerbayeva 2018; Wallengren Lynch 2018); the need to focus overtly on research and professional conferences as sites of knowledge generation (Chapman, Wiessner, Sorberg-Walker & Hatcher, 2006); designing research and professional conferences for whole person learning (Mader, Zimmermann, Diethart & Mulà 2020); extending learning beyond the formal spaces of a research conference using social media (Jacobs & McFarlane 2005; Sethi, Desai, & Jhaveri 2010); use of professional conferences for the professional development of staff (Grissom 1992; King 2017); and an interesting synthesis of conference design and evaluation as applied to research and professional conferences (Chapman, Wiessner, Sorberg-Walker & Hatcher, 2006).

In summary the archetypal conference design has constrained affordances to support learning by participants and this needs to change. Some of the most obvious ways to improve this model include enhanced opportunities for networking and social interaction and participatory event genres that support the agency of participants in pursuing the learning that they need. The persistence of the traditional conference as a conveyor belt of presentations with highly constrained time for collegial discussion may relate to the strong link between presentation and funding for conference attendance as well as to the need for an efficient way to surface the most recent research to the conference community. This in turn limits the scope for creative conference redesign.

How have face to face conferences changed?

Conference designers need to support various forms of social learning including networking and reflective learning in communities of practice or inquiry. According to Zelmer & Zelmer (1991, pp.14-15) informal interaction yields several benefits to conference participants including "exchanging information with colleagues", "meeting potential colleagues", "talking to old friends", and "exploring employment opportunities". Howarth et al., (2007, p.7) suggested that participants attend conferences for a wide range of reasons including "learning new techniques, methods, and technologies." They recommend the use of event genres and processes that facilitate "exploration and inquiry" by participants.

The traditional conference format has been questioned over several decades. One of the most striking examples is the description by Mill (1970) of an environmental conference a few years earlier which flattened the conventional conference hierarchy and included space for experiential activities. In this radical vision of conference design at that time, Mill (1970, p. 4) suggested that "There will be fewer information-giving sessions and more information exchange; fewer passive audiences and more participative groups."

Alternative conversational conference formats have antecedents going back as far as a conference organised by Alexander Humboldt in 1828 where "Rather than being talked at, he wanted the scientists to talk with each other" (Wulf 2015, p. 227). Since 2000 the growth of unconferences has offered another model for the design of highly participatory events. Unconferences often have a strong open space influence and focus on radical codesign of the conference and creating the conditions for peer learning to thrive (Greenhill & Wiebrands 2008). Thompson and Crichton (2014, p. 6) stated that "central to the unConference design is a focus on active participation; emergent

sessions, topics, and ideas; and the collection of rich digital and physical artifacts." Designers of conferences which step beyond the default model are able to draw on a growing set of resources for inspiration. This includes writing on participatory conferences by Segar (2010) and a book and website about liberating structures, which are designed to unleash the brilliance and creativity of meeting participants involved in collaborative learning, design and decision making in informal and formal settings (Lipmanowicz & McCandless 2014).

A quick search about innovative formats used in face to face conferences revealed processes such as Campfire Sessions, Birds of a Feather, Human Spectrogram, Lightning Talks, PechaKucha, World Café, Storytelling and Braindates (Eventbrite 2020). An article by De Palma & Hoffman (2019) on the Most Innovative Meetings 2019 described innovations to create an immersive environment such as app to make a whole city "feel like an event venue", a supercomputer engaged in "a live, public debate with a human", "a YouTube ukulele star who taught a class for attendees", and "a technology-equipped basketball court". And of course the physical spaces were designed to make networking very pleasant. It does seem though that much of this innovation was in the higher budget corporate conferences.

Effective conferences facilitate integration of delegates in a temporary conference community that includes respect and space for individuals to pursue their own interests. A conference that supports individual and collective learning negotiates multiple interdependent and dynamic balances including balancing formal interaction with spaces and opportunities for informal engagement. Especially in the case of professional conferences it may combine presentation of information and ideas with the learning of perspectives, practices and relational agency through conversation across the landscape of practice (Wenger-Trayner, Fenton-O'Creevy, Hutchinson, Kubiak, & Wenger-Trayner 2014) presented by the broader conference community, which includes multiple stakeholders with a shared interest in the conference themes and debates. These reappraisals and innovations in design all predate the rapid shift to online conferences in 2020. It appears then that conferences have been changing for several decades and that there is a wide range of designs for conferences and conference activities.

How have online conferences changed conferences?

What are online conferences?

"An online conference is a structured, time delineated, professional education event that is organised and attended on the Internet by a distributed population of presenters and participants who interact synchronously and/ or asynchronously by using online communication and collaboration tools." (Anderson & Anderson 2010, p. 5).

Even before the pandemic, large international face to face conferences in particular become highly problematic when we consider their associated carbon footprint (Bousema et al., 2020, Evrard, Zwolinski & Brissaud 2021) in an era of impending ecological collapse and the exclusionary effects of transport and accommodation costs and premium conference fees. Online conferences were not invented in 2020 but they were reinvented several times when suddenly required during the first year of the pandemic. This mostly resulted in designs for Emergency Remote Conferences which were narrow in purpose and tried to replicate the flow of a conventional face to face conference (including overwhelming participants with several parallel tracks and a conveyor belt of short presentations with limited time for discussion). Given the prevalence of these platforms in many institutional settings, participants could often rely on spending most of the day in a Zoom or MS Teams webinar listening to presentations, and the total conference experience was constrained by the lack of opportunity for networking and social interaction outside scheduled presentation sessions.

Online conferences predate the existence of the World Wide Web. The earliest online conference known to the author was organised by Lisa Kimball in 1984 and used a network of several mainframe computers. Another early model which used e-mail was the Online Distance Education Conference designed by Terry Anderson in 1992 (Anderson & Mason, 1993, p. 6). A unifying feature of most online conferences through to the late 1990s was their reliance on asynchronous interaction, which in many cases was supplemented by the use of chat as the only synchronous tool.

Ongoing shifts in Internet access, bandwidth, reliability of Internet connections and computing power since the mid-1990s have resulted in transformations of technologies and formats of online conferences. With the pervasive availability of free and low cost live meeting technologies came the rise of online conferences based on intense live interaction in tightly scheduled events over a few days, however this risks losing reflective space and opportunities for spontaneous networking and social interaction. Even before the pandemic, several conferences were experimenting with hybrid formats which could allow for some remote presentations and for participation by remote delegates in selected sessions. The box below describes the e/merge online conference series as an example of a pre-pandemic online conference.

Example 1: The e/merge online conference series

As an example of a pre-pandemic conference I will offer the e/merge series of five online conferences between 2002 and 2018 in which I took leading roles as designer and convenor. These conferences were organised by the Centre for Educational Technology and (as its successor unit), the Centre for Innovation in Learning and Teaching at University of Cape Town. After 2012 the project transitioned into the formation of the e/merge Africa network which offers regular online professional development events about teaching with technology in African higher education. The e/merge conferences were designed as special events to support the sharing of good practice and the growth of communities of practice among educational technology researchers and practitioners across Africa and beyond. This design was geared to a highly dispersed and diverse participant community with widely varied Internet access conditions and practices concerning online communication.

Some key elements of the design included:

1. Synchronous and asynchronous engagement for the immediacy and buzz of live interaction and the flexibility and reflection of a forum discussion extended over several days.
2. Combining formal and informal interactions to support engagement with a full range of professional and personal identities and including spaces where participants who are reticent in the formal interactions would be more willing to express themselves.
3. Having both scheduled and participant initiated interactions provided a predictable and easily navigable programme as well as opportunities for participants to shape the programme during the conference.
4. The agenda explicitly linked global developments and African contexts and voices.
5. Engagement through social media made the conference porous to engagement with colleagues who were not registered participants.
6. Presenting a duality of conference and festival allowed for exuberant celebration of community and achievement.
7. Use of both basic and advanced tools allowed for the use of well tested and highly useable tools for the bulk of conference interactions while colleagues with more advanced digital literacies and some tolerance for uncertainty, experimented with new, sometimes leading edge tools.

As stated in Carr (2016, p. 86) “[d]esigning and facilitating online conferences involves negotiating the balances faced by organisers of face-to-face conferences in a developing medium with an expanding toolkit. Online conferences then challenge us to consider how online communication facilitates reshaping or remediation (Bolter, 2001) of the notion of a conference” since the newer technologies allow for different modes of interaction and transformed experiences of conference participation. Most online conferences (and especially most of emergency remote conferences in the earlier phase of the pandemic) used technologies and equipment designed for other purposes to create an impoverished version of the formal face to face conference experience which lost the most vibrant aspects of conferences such as alternative event genres and opportunities for enhanced social learning, networking and social interaction. The affordances of readily available technologies were generally being underutilised. It would seem then that some online conferences created interesting alternatives to conventional face to face conferences however this had a negligible influence on the dominant mainstream conference design before the pandemic.

How have online conferences changed during the pandemic?

The spread of COVID-19 internationally was a cause for growing alarm in January and February 2020 but after the World Health Organisation declared COVID-19 as a pandemic on 11 March 2020 (Rumbley 2020, p. 3) most countries announced lockdowns and eventually imposed strict travel restrictions. Conference organisers were left with the difficult choice of whether to cancel, postpone or to stay with the planned dates for events. In many cases the organisers and sponsoring organisations had no experience of online conferences and lacked the requisite technologies and technical capacity. The particle physics research community which organised one of the first emergency remote conferences of the pandemic was, however well poised to pivot online. In some ways this was an unfair example. Physicists are used to self-organising and had far more experience of online conferences and collaboration than many of us having been engaged in online conferencing since 2002. This depth of experience facilitated the rapid pivot online by particle physicists as shown in the box below.

Example 2: The Particle Physics March 2020 Meeting as an Emergency Remote Conference



One of the first large face to face conferences to be cancelled as a result of the COVID-19 pandemic was the Particle Physics March 2020 meeting which was scheduled as a face to face conference in Denver, Colorado. Physicists who were already in Denver organised smaller face to face meetings while others used a variety of familiar free and low cost online tools and environments to set up online presentations and discussions.

This was one of the first emergency remote conferences of the pandemic though particle physicists accustomed to global research collaboration were better equipped to rapidly move a conference online than were many other areas of academia. By the time of the Particle Physics April 2020 meeting they had the process worked out and ran the meeting with about 7000 participants spread across hubs in 6 continents (Thomas 2020).

The basis of emergency remote conference design is to focus on core processes, use available and no/ low cost tools and to move fast. The underlying challenge seemed to be one of design rather than tools though. My observation from dropping into several academic and more mainstream conferences during the pandemic is that an overwhelming focus on synchronous interaction crowds out reflective engagement and that the use of webinar rather than meeting formats can shut down community voices and interaction.

Roos et al., (2020) wrote in *Computational and Theoretical Chemistry* about the story of the Computational Chemistry virtual winter schools starting in 2015. They provide sound advice about designing and holding online conferences and even offer access to their platform. They remind us to tap into the learning from online conferences that were held before 2020, rather than rushing in panic to reinvent the wheel (which has been a very popular approach during the pandemic).

The pandemic era articles and reports which I have consulted repeatedly refer to informal communication and networking as a weakness of online conferences (Roos et al., 2020, p5; Niner, Johri, Meyer & Wasserman 2020, p. 255; Rubinger et al., 2020, p. 1465), however this is being addressed in several ways. Song, Riedl, & Malone (2020) from the MIT Center for Collective Intelligence report on the Minglr system which was designed "to support online the kind of informal conversations that happen around the edges of in-person meetings, such as the hallway conversations at in-person conferences" (p. 4). As stated in their website Qiqochat "provides a social wrapper around Zoom meetings so that participants can move themselves in and out of different Zoom breakout spaces" (Qiqochat 2023). Each Qiqo breakout space is paired to a Zoom meeting as well as to an instance of Google Docs or another note taking tool. There are several commercial systems using spatial metaphors to support group and paired interactions including Remo with virtual rooms and furniture and Spatial Chat and Wonder.me where you access audio and video communication through proximity with the avatars of other participants. The Hopin environment supports small and large group engagement and can scale to events in the 100s of thousands of participants. As you would expect many of these environments are priced for commercial clients.

Two models of online conferences from 2020

Here I have generally chosen to avoid examples of standard academic conferences because for the most part the models used are quite predictable and impoverished by the constrained thinking characteristic of emergency remote conference designs. Perhaps we need to step beyond that comfort zone and to draw on examples of professional development conferences to consider ways to tweak and rethink our models for online scholarly conferences. This required conference designers to step beyond the pre-pandemic default of seeing online technologies as mere add-ons to a face event. The examples described here include the 2020 Teaching and Learning Conference at University of Cape Town where I was involved as a conference designer and convenor, and the 2020 Future of Work 24 Hour Global Gathering. These events were chosen because they offer different models of conference design. The University of Cape Town Teaching and Learning Conference used the format of an academic conference as a container for reflective interaction and peer support among a local community of researchers and educators who were still feeling the shock of the rapid transition to emergency remote teaching even while becoming an international conference. The Future of Work 24 Hour Global Gathering modelled the use of Open Space online to support participant initiated conversations.

Example 3: A “Local” Event:

At the University of Cape Town (UCT) our Teaching and Learning conference went online for the first time in 2020 with the theme of “Shifting Academic Identities” as a framing for engagement with the experience and implications of the rapid shift to emergency remote teaching. After months of conceptual planning and a struggle to resolve the conference dates within a pandemic disrupted university calendar we had five weeks from the issue of the call for abstracts to pull the conference together.



Wednesday 23 September 2020

Join us today, starting at 9:00AM - [More details on TLC2020](#)

Hub:

- [Jazzart Chair Class 2 - Jacqueline Manyaaapelo](#)
- [KEYNOTE WORKSHOP: Shifts in Academic Practices As We Rethink the Purpose of Education - Associate Professor Maha Bali](#)
- [Engaging the social through responsive teaching and learning: context matters - Associated Professor Janice McMillan](#)
- [Data Analysis for Student Success: Learnings - Professor Suellen Shay](#)

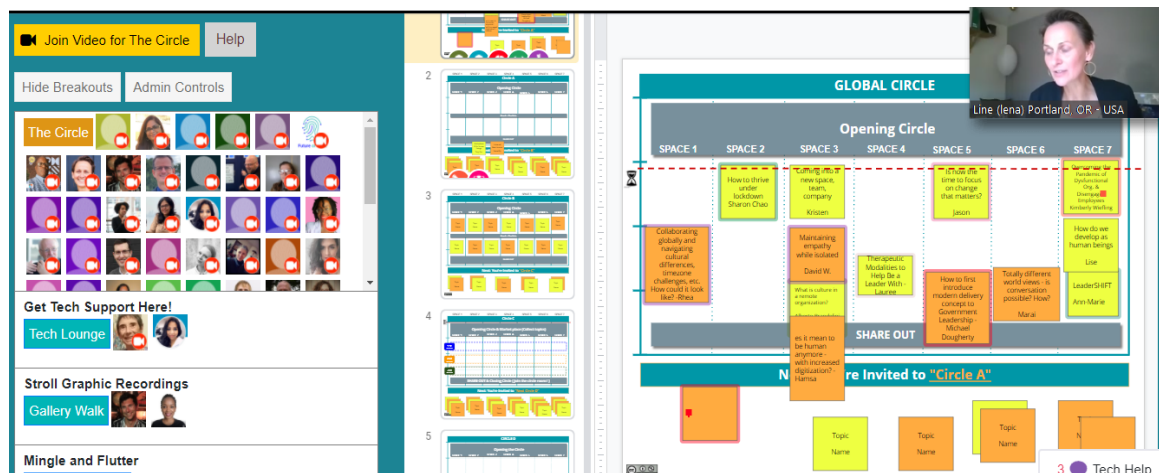
We leveraged several advantages including: 1) most members of our team had been involved in one or more of the e/merge online conferences; 2) some had been trained as online facilitators through the e/merge Africa project; 3) our Zoom licences and 4) our adaptable Sakai LMS installation. We reused a Sakai site template developed for the e/merge Africa 2018 Festival of e-Learning in Africa. It is interesting to consider that members of our team had been designing, convening, facilitating, and researching online conferences since 2002 and TLC2020 was our first online conference for our own university. The 2020 conference attracted more participation than the previous face to face conferences both from UCT, and then from across Africa and three more continents. Our formerly very local conference went national, international and to some extent global simply by virtue of being online. Our participants included colleagues from 17 other South African educational institutions, from 7 other African countries and from Australia, the UK and the USA. In total there were 2 keynotes, 46 events and 63 presenters. The conference was spread across a week with several long breaks built into the schedule (Carr and Govender, 2020).

Our organisers were familiar with some of the literature on the ethics of care and trauma informed teaching (Bali 2015; Harper & Neubauer 2021; Tronto 2020). This led into a design that acknowledged how participants had been through a truly challenging time with Emergency Remote Teaching. There were workshops about finding personal and collective sustainability and about rethinking purpose and practices. We also had a Jazzart chair movement activity for two mornings and there were escape room style puzzles on the conference site.

Positive feedback from participants focused on the inclusive conversations, breakout engagements with colleagues, sharing of knowledge in a time of uncertainty, reflection on the emergency remote teaching experience, flexible participation, experimental/playful sessions, and easy navigation. There were also participants who reported technical issues, work pressure, conflicts with vacation activities and difficulty in site navigation. There was also an indication that some participants didn't enjoy the space given to emotional expression and subjective perspectives in some of the events (Carr & Govender, 2020).

Example 4: A small participant driven event

The Future of Work 24 Hour Global Gathering from 25-26 September 2020 involved 216 enthusiastic participants across the world in an open space event about the future of work which spanned all time zones to facilitate global participation. As reported by Jefferson (2020) the inclusive focus of this not for profit event was supported by the “pay-what-you-can ticket option”, “invited Open Space facilitators from different demographics and networks” and co-design of the conference with facilitators and volunteers from several global regions.



At the start of each 4 hour session participants would meet and nominate and schedule topics for conversation each lasting about an hour. Generally the proposer of the conversation would take the lead but there was also a lot of peer facilitation. As is the case in open space events participants were free to move between rooms and leave as they chose. In addition to the rooms for focused conversation there was a Butterfly Garden for mingling and the “Groundhog Burrow” for solitude with calming music. Each session ended with a shareout of about 30 minutes including sharing of graphic recordings and participant reflections.

A large part of the success of this conference is attributable to the depth of experience and the strength of the personal and social ties within the Open Space community and their ability to work in alliance with members of several facilitation and leadership and thought communities.

The design choices and practices observed across these online conferences include a reorientation of a local conference as it attracted participants from across several continents, social events and events focused on embodied experience in community and participant initiated conversations, with the freedom to move between conversations. Other fruitful approaches reported from online conferences held during the pandemic included drawing on design principles from problem based learning to optimise a medical conference for learning by participants (Hofstädter-Thalman, Rotgans, Perez & Nordquist 2022), introducing a range of strategies to centre inclusivity in conference design (Levitis, Van Praag, Gau, Heunis, et al., 2021), gamification with an alternate reality game (Thibault, Legakia, Buruka & Hamaria 2021), using automation to facilitate “talk scheduling and agenda curation” (Achakulvisut, et al., 2021, p 265), and including regional keynote speakers (Hoffman, Paek, Ho & Kimura 2021).

In summary it would be reasonable to conclude that online conferences have been changing in two different directions during the pandemic. To the extent that emergency remote conferences settled for impoverished designs, online conferences regressed at a design level even while rapidly expanding the potential participant and presenter pool for future online conferences. There is a risk that while participants in these conferences now have the technology setup for participation in future online conferences, their constrained experiences may inhibit future online conference engagement. Where online conference designers were able to take advantage of the licence afforded by the pandemic to learn from good pre-pandemic designs and to innovate boldly, online conferences have improved, potentially fuelling longer term demand for further online conferences.

Why should online conferences continue to be held after the pandemic?

Perhaps you also spent a few years longing for the full spectrum human communication of face to face conferences including shared presence without mediating technology; tea or a meal together with other delegates; real eye contact; handshakes; perhaps even a collegial hug or two. We are currently in a weird and perilous liminal space across much of the world with stark disparities in vaccination rates between regions (Bayati et al., 2022) and vaccinations lagging behind the proliferation of new COVID-19 variants (Ciotti et al., 2022; Shao et al., 2022) combined with a disjuncture between the prevalent perception that the pandemic is over and the risks of organ or neurological damage (Visco et al., 2022; Zhao, Li, Xu & Xu 2022) after even a relatively mild initial infection. The rush to return to large, unmasked face to face conferences with poor ventilation during an ongoing pandemic may have produced a new wave of superspreader conferences (Flaherty 2022; Swaminathan, Smith & Choo 2022).

These messy and awkward attempts to return to the pre-pandemic normal still challenge us to consider what happens when the pandemic really ends. This raises the question of whether we are in the early stage of a headlong return towards the old normal of face to face conferences as the standard which could result in online conferences retreating to their former marginal status in the conference ecosystem.

I would strongly argue that this will not be the case for several, often interlinked reasons:

- 1) We are in an age of pandemics brought on by environmental destruction and mass global travel. COVID-19 is simply the latest of these and there will be others, of which some may also require drastic responses by governments and global society.
- 2) The current pandemic temporarily shifted global attention from the catastrophic consequences for humanity of the environmental and climate change crises. When we are able to refocus on these issues, the environmental arguments against long haul travel to conferences will become even more compelling than they were before the pandemic.
- 3) The proliferation of online conferences has resulted in millions of new online conference participants who have learnt new practices of online participation with new tools and have experienced the benefits of much lower cost access to high quality conferences across the world.

It is then likely that after the pandemic there will be a strong return to face to face conferences, especially those with a local or national focus. Global and regional online conferences will continue and may even grow as their designs improve. We are likely to see conferences that were formerly exclusively face to face becoming hybrid. Roos et al., (2020, p. 5) concluded that

"We see now either virtual conferences or in-person meetings. However, for the future, it might be desirable to work towards a hybrid online/in-person format to reduce pressure from environmental and availability factors without impairing social networks."

We can also expect that in an increasingly rich and competitive ecosystem innovation in conference design will continue as conference organisers try to better meet the needs of their networks and to differentiate their conferences from alternatives bidding for the attention and revenue of the same constituencies. The design of hybrid conferences will however require a specific focus on growing a hybrid conference community which includes rich interactions between face to face and virtual participants.

CONCLUSION

Conference participation and presentation are core practices in research and professional communities. Over time the conference experience has shifted as conference organisers have redesigned events to provide enhanced opportunities for networking and social interaction, support for reflective learning, participant initiated conversations, and in some contexts, experiential learning events. The archetype of a conference as a conveyor belt of keynotes and parallel tracks of short presentations with limited time allowed for discussion, is being slowly eroded. The literature also provides evidence of several approaches that have been used to design conferences as learning events.

Online conferences date back to at least 1984. Over several decades the balance of interaction has shifted towards synchronous events and many online conferences try to reproduce the structure and timing of conventional face to face conferences. An alternative model cited here is the *e/merge* online conference series which provides spaces for informal and social interaction and stretches discussions out over several days to enhance reflective learning and engagement and access. Online conferences were gaining some traction before the pandemic but were still seen as a second choice by most conference designers and participants.

Online conferences were thrust into the mainstream as a result of restrictions on travel and large indoor gatherings during the COVID-19 pandemic. Many conference organisers rushed online to produce emergency remote conferences which reproduced the formal interactions of face to face conferences but provided poorly for the social and networking experiences of participants. The scale and urgency of the shift online meant that the new online conference organisers often lacked the time or knowledge to draw on the existing literature about online conference design and reinvented online conferences with varied degrees of success.

There were several examples of well designed online conferences during the pandemic. Where face to face meeting processes activities were remediated for online engagement, the conferences were able to support networking and peer learning as well as increase their scale and the geographical range of participants. Some of their design features which are worth further exploration included events focusing on the sustainability of the work done by participants, online events that brought physical movement in the conference, recreational spaces, participant initiated conversations with free movement between rooms, and a mingling space. Many of these elements are consistent with trauma informed design. Other approaches used in pandemic era online conferences include designing a conference to optimise learning, centring inclusivity, gamification, automation of scheduling and event curation, and including regional keynote speakers.

It is likely that most of the conference platforms used in 2020 were able to easily include several of these design choices. It is only during the emerging post-pandemic period that we will really see the full influence of online conferences on conference design. Online conferences will not disappear after the pandemic and many formerly face to face conferences will be redesigned as hybrid events. It is my fervent hope that the designers of the first wave of pandemic induced online conferences have already moved into a new phase of design which takes good account of the social, emotional, and physical needs of online conference participants. This approach will also feed into the design

of hybrid conferences which provide opportunities for authentic and full engagement across the whole hybrid conference ecosystem.

REFERENCES

- Achakulvisut, T., Ruangrong, T., Mineault, P., Vogels, T. P., Peters, M. A., Poirazi, P., Rozell, C., Wyble, B., Goodman, B. & Kording, K. P. (2021). Towards democratizing and automating online conferences: lessons from the neuromatch conferences. *Trends in Cognitive Sciences*, vol. 25, no. 4, pp. 265-268.
- Anderson, L. & Anderson, T. (2010). *Online Conferences: Professional Development for a Networked Era*, Information Age Publishing, Charlotte, New Carolina.
- Anderson, T. & Mason, R. 1993, "International Computer Conferencing for Professional Development: The Bangkok Project", *The American Journal of Distance Education*, vol. 7, no. 2, pp. 5-18.
- Bali, M. (2015) Pedagogy of Care - Gone Massive. *Hybrid Pedagogy*, 20 April 2015. Available: <https://hybridpedagogy.org/pedagogy-of-care-gone-massive/> [Accessed:3 January 2022].
- Bayati, M., Noroozi, R., Ghanbari-Jahromi, M., & Jalali, F. S. (2022). Inequality in the distribution of Covid-19 vaccine: a systematic review. *International journal for equity in health*, vol. 21, no. 1, pp. 1-9.
- Bolter, J.D. (2001). *Writing Space: Computers, Hypertext, and the Remediation of Print*, Lawrence Erlbaum Associates, Mahwah, New Jersey.
- Bousema T, Selvaraj P, Djimde AA, Yakar D, Hagedorn B, Pratt A, Barret D, Whitfield K, Cohen JM. (2020). Reducing the Carbon Footprint of Academic Conferences: The Example of the American Society of Tropical Medicine and Hygiene. *The American Journal of Tropical Medicine and Hygiene*, vol. 103, no. 5, pp. 1758-1761. doi: 10.4269/ajtmh.20-1013. PMID: 33069267; PMCID: PMC7646750.
- Campbell, A., Wick, D., Marcus, A., Doll, J., & Hammack, A. Y. (2021). "I felt like I was not just a student:" examining graduate student learning at academic and professional conferences. *Studies in Graduate and Postdoctoral Education*.
- Carr, T. & Govender, S. (2020) *2020 Teaching and Learning Conference: 10 Minute Report*. Internal Presentation to University of Cape Town Teaching and Learning Committee, 15 October 2020. Unpublished.
- Carr, T. (2016). Designing online conferences to promote professional development in Africa. *International Journal of Education and Development using ICT*, vol. 12, no.2.
- Chapman, D. D., Aalsburg Wiessner, C., Storberg-Walker, J., & Hatcher, T. (2006). *New Learning: The Next Generation of Evaluation?* Online Submission.
- Ciotti, M., Ciccozzi, M., Pieri, M., & Bernardini, S. (2022). The COVID-19 pandemic: Viral variants and vaccine efficacy. *Critical reviews in clinical laboratory sciences*, vol. 59, no.1, pp. 66-75.

- Common Repository Interfaces Group (2007). *CRIG Unconference Wiki*. Available: http://www.ukoln.ac.uk/repositories/digirep/index/CRIG_Unconference [Accessed: 23 February 2021].
- Decuyper, M., & Simons, M. (2019). Continuing attachments in academic work in neoliberal times: On the academic mode of existence. *Critical Studies in Education*, vol. 60, no. 2, pp. 226-244.
- DePalma, N., & Hoffman, C. (2019). The 15 Most Innovative Meetings 2019, BIZBASH. <https://www.bizbash.com/bizbash-lists/meetings-conferences/article/21091252/2019s-most-innovative-meetings-conferences-trade-shows-and-other-events>
- Elton, L. R. B. (1973). Talk-in. *Physics Bulletin*, vol. 24, no. 11, p. 645.
- Elton, L. (1983). Conferences: Making a Good Thing Rather Better?. *British Journal of Educational Technology*, vol. 14, no. 3, pp. 200-215.
- Eventbrite (2020). The 2020 Event Trends Report. <https://www.eventbrite.com/blog/academy/2020-event-trends-report/>
- Evrard, D.; Ben Rejeb, H.; Zwolinski, P.; Brissaud, D. (2021). Designing Immortal Products: A Lifecycle Scenario-Based Approach. *Sustainability* vol. 13, p. 3574. <https://doi.org/10.3390/su13063574>
- Flaherty, C. (2022) Pandemic at the Conference. *Inside Higher Ed*. 11 May 2022. Available: <https://www.insidehighered.com/news/2022/05/11/how-scholarly-meeting-became-superspreader-event> [Accessed 3 January 2022].
- Greenhill, K., & Wiebrands, C. (2008). The unconference: a new model for better professional Communication. Poropitia Outside the Box: LIANZA Conference 2008, Auckland, N.Z., 2-5 Nov. 2008. <http://opac.lianza.org.nz/cgi-bin/koha/opacdetail.pl?bib=383>
- Grissom, B. M. (1992). Fostering Adult Learning Principles for Your Staff: One Administrators Perspective of the Value of Conferences. *Adult Learning*, vol. 4, no. 1, pp. 15-17.
- Harper, G. W., & Neubauer, L. C. (2021). Teaching during a pandemic: A model for trauma-informed education and administration. *Pedagogy in health promotion*, vol. 7, no. 1, pp. 14-24.
- Hoffman, D. L., Paek, S., Ho, C. P., & Kimura, B. Y. (2021). Online-Only International Conferences: Strategies for Maintaining Community. *TechTrends*, vol. 65, no. 4, pp. 418-420.
- Hofstädter-Thalmann, E., Rotgans, J. I., Aybar Perez, N., & Nordquist, J. (2022). Effective Learning in Virtual Conferences: The Application of Five Principles of Learning. *Journal of European CME*, vol. 11, no. 1, 2019435.
- Howarth, J., Pyla, P., Yost, B., Haciahmetoglu, Y., Young, D., Ball, R., Lambros, S. & Layneo, P. (2007), Designing a Conference for Women Entering Academe in the Sciences and Engineering. Available: <http://citeseerx.ist.psu.edu/viewdoc/summary?doi=10.1.1.413.2147>
- Hubbard, G. (1976) Book review of Aspects of Educational Technology VIII, *British Journal of Educational Technology*, vol. 7, no. 2, p. 70.

- Jacobs, N., & McFarlane, A. (2005). Conferences as learning communities: some early lessons in using 'back-channel' technologies at an academic conference—distributed intelligence or divided attention?. *Journal of Computer Assisted Learning*, vol. 21, no. 5, pp. 317-329.
- King, M. B. (2017). Are conferences and workshops valid and effective?. *The Learning Professional*, vol. 38, no. 5, pp. 10-11.
- Kuzhabekova, A., & Temerbayeva, A. (2018). The role of conferences in doctoral student socialization. *Studies in Graduate and Postdoctoral Education*, vol. 9, no. 2, pp. 181-196.
- Levitis, E., Van Praag, C. D. G., Gau, R., Heunis, S., DuPre, E., Kiar, G., & Maumet, C. (2021). Centering inclusivity in the design of online conferences—An OHBM—Open Science perspective. *GigaScience*, vol. 10, no. 8.
- Lipmanowicz, H., & McCandless, K. (2013). *The surprising power of liberating structures: Simple rules to unleash a culture of innovation*. Seattle, WA: Liberating Structures Press.
- Lortie, C. J. (2020). Online conferences for better learning. *Ecology and evolution*, vol. 10, no. 22, pp.12442-12449.
- Mader, C., Zimmermann, A. B., Diethart, M., & Mulà, I. (2020). Virtual conferences in higher education: Teasing out their transformative potential for sustainable development. *GAIA-Ecological Perspectives for Science and Society*, vol. 29, no. 1, pp. 57-59.
- Mill, C.R. (1970). "Conference Planning for the Seventies" in *Conference Planning*, eds. W.W. Burke & R. Beckhard, NTL Institute for Applied Behavioural Science, Washington D.C., pp.3-10.
- Jefferson, A. and Morbak, L. (2020) Take on the Challenge: Inclusive Remote Event at Scale Reflections from curating a 24 hour remote global Open Space on the Future of Work. *LEAPlab*, 23 October 2020. Available: <https://medium.com/leaplab/integrated-circles-7e428f04fa49> [Accessed: 11 August 2022].
- Niner, H. J., Johri, S., Meyer, J., & Wassermann, S. N. (2020). The pandemic push: can COVID-19 reinvent conferences to models rooted in sustainability, equitability and inclusion?. *Socio-Ecological Practice Research*, vol. 2, no. 3, pp. 253-256.
- Qigochat (2023) *Qigochat Website*. Available: <https://qigochat.com/about/events> [Accessed 4 April 2023].
- Ravn, I., & Elsborg, S. (2007). Creating learning at conferences through participant involvement. Not a Discipline." *Innovations in Practice*, vol. 12, no. 1, pp. 21-33.
- Roos, G., Oláh, J., Ingle, R., Kobayashi, R., & Feldt, M. (2020). Online conferences—Towards a new (virtual) reality. *Computational and Theoretical Chemistry*, 1189, 112975.
- Rubinger, L., Gazendam, A., Ekhtiari, S., Nucci, N., Payne, A., Johal, H., Khanduja, V. & Bhandari, M. (2020). Maximizing virtual meetings and conferences: a review of best practices. *International orthopaedics*, vol. 44, no. 8, pp. 1461-1466.
- Ruediger, D. and Pokharel, J. (2022) The Many Faces of Meetings: A Taxonomy of Emerging Models for In-Person and Hybrid Conferences. *JSTOR Labs*, 29 July 2022. Available: <http://labs.jstor.org/blog/the-many-faces-of-meetings/> [Accessed: 11 August 2022].

- Ruediger, D., & Cooper, D. (2021). *COVID-19 and the Future of the Annual Meeting*. Available: <https://sr.ithaka.org/wp-content/uploads/2021/10/SR-Report-COVID-19-and-the-Future-of-the-Annual-Meeting-101821.pdf> [Accessed: 11 August 2022].
- Rumbley, L. E. (2020). *Coping with COVID-19: International higher education in Europe*. The European Association for International Education (EAIE), 1, 1-26. Available: https://drguven.com/wp/wp-content/uploads/2020/03/Covid-19Report_FA.pdf [Accessed: 15 February 2023].
- Segar, A. (2010). *Conferences that work. Creating events that people love*, Booklocker.
- Sethi, S. K., Desai, T. P., & Jhaveri, K. D. (2010). Online blogging during conferences: an innovative way of e-learning. *Kidney international*, vol. 78, no. 12, pp.1199-1201.
- Shao, W., Chen, X., Zheng, C., Liu, H., Wang, G., Zhang, B., Li, Z & Zhang, W. (2022). Effectiveness of COVID-19 vaccines against SARS-CoV-2 variants of concern in real-world: a literature review and meta-analysis. *Emerging Microbes & Infections*, vol. 11, no. 1, pp. 2383-2392.
- Song, J., Riedl, C., & Malone, T. W. (2020, July). Online Mingling: Supporting Ad Hoc, Private Conversations at Virtual Conferences. In *Private Conversations at Virtual Conferences* (July 31, 2020).
- Spilker, M., Prinsen, F., & Kalz, M. (2020). Valuing technology-enhanced academic conferences for continuing professional development. A systematic literature review. *Professional development in education*, vol. 46, no. 3, pp. 482-499.
- Swaminathan, A., Smith, J. & Choo, E. (2022) The irony — and ignominy — of medical conferences as superspreader events, *Stat News*, 14 June 2022. Available: <https://www.statnews.com/2022/06/14/the-irony-and-ignominy-of-medical-conferences-as-superspreader-events/> [Accessed 3 January 2022].
- Sweeting, B., & Hohl, M. (2015). Exploring alternatives to the traditional conference format: Introduction to the special issue on composing conferences. *Constructivist Foundations*, vol. 11, no. 1.
- Thibault, M., Legaki, N. Z., Buruk, O., & Hamari, J. (2021). Etsijä's Call: Gamifying virtual conferences with alternate reality games. *CEUR Workshop Proceedings*.
- Thomas, J. (2020) Canceled Meeting Makes a Virtual Rebound, *Physics* vol. 13, no. 34, 6 March 2020. Available: <https://physics.aps.org/articles/v13/34> [Accessed: 15 August 2022].
- Thompson, T. L., & Crichton, S. (2014). *The unConference Toolkit*. Digital Opportunities Trust. Available: <https://dspace.stir.ac.uk/bitstream/1893/28723/1/unconferencetoolkitAug27e-1.pdf> [Accessed 4 April 2023].
- Tronto, J. C. (2020). *Moral boundaries: A political argument for an ethic of care*. Routledge.
- Wulf, A. (2015) "The Invention of Nature: Alexander von Humboldt's New World", Vintage Press.
- Verbeke, J. (2015). *Designing Academic Conferences as a Learning Environment*. Constructivist Foundations, vol. 11, no. 1.

- Visco, V., Vitale, C., Rispoli, A., Izzo, C., Virtuoso, N., Ferruzzi, G. J., Santopietro, M., Melfi, A., Rusciano, M.R., Maglio, A., Di Pietro, P., Carrizzo, A., Galasso, G., Varella, A., Vecchione, C. & Ciccarelli, M. (2022). Post-COVID-19 Syndrome: Involvement and Interactions between respiratory, cardiovascular and nervous systems. *Journal of Clinical Medicine*, vol. 11, no. 3, p. 524.
- Walker, J. (2008). Creating new learning at professional conferences: An innovative approach to conference learning, knowledge construction and programme evaluation. *Human Resource Development International*, vol. 11, no. 4, pp. 367-383.
- Wallengren Lynch, M. (2018). Using conference poster presentations as a tool for student learning and development. *Innovations in Education and Teaching International*, vol. 55, no. 6, pp. 633-639.
- Wenger-Trayner, E., Fenton-O'Creevy, M., Hutchinson, S., Kubiak, C., & Wenger-Trayner, B. (Eds.). (2014). *Learning in landscapes of practice: Boundaries, identity, and knowledgeability in practice-based learning*. Routledge.
- Zelmer, A. & Zelmer, L. (1991). *Organising Academic Conferences*, Herdsa.
- Zhao, W., Li, H., Li, J., Xu, B., & Xu, J. (2022). The mechanism of multiple organ dysfunction syndrome in patients with COVID-19. *Journal of Medical Virology*, vol. 94, no. 5, pp. 1886-1892.

Copyright for articles published in this journal is retained by the authors, with first publication rights granted to the journal. By virtue of their appearance in this open access journal, articles are free to use with proper attribution, in educational and other non-commercial settings.