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CO-llaborative VI-rtual D-esign: A Collaborative Autoethnography on Conducting Exclusively Online, Data-Led Collaborations in the Creative Industries

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Abstract

This collaborative autoethnographic story of #DataCreativities articulates data traces found within the rapid move online in education and creative sectors in Melbourne, Australia. As a result of the lockdowns imposed to combat the initial spread of COVID-19, this collaboratory began within the anxieties of 2020. #DataCreativities takes a data-related approach to understanding the fast-paced shift to making, learning, teaching, and living in a crisis through research and art. Twelve months on, we figure (out) our own data and practice. We ask: What does CO-llaborative VI-rtual D-esign look like, how can it be established, and how can it be sustained?

Keywords

secondary data, research practice, mixtape methods, online collaboration, COVID-19

About #DataCreativities

In mid-2020, as Australia began to feel the full force of the COVID-19 crisis, a group of researchers from across the University were brought together by a common interest: to uncover how our education and creative industries sectors are reacting and adapting to an environment mediated by physical isolation, social disruption, and health and economic crises. This group formed a collective under the title #DataCreativities to explore this research theme. At the heart of the #DataCreativities approach is a desire for research to be data led—that is, #DataCreativities first seeks out data sources, then extracts data, then explores the narrative that can be constructed from that data, and uses this to guide the formulation of research questions.

In late May 2020, a small, diverse group of researchers first met, for one of those awkward early-scoping-while-getting-to-know-each-other meetings, in an online space. It was at this time the full force of Australia's COVID-19 crisis was being felt by the

nation's Creative Industries. In Melbourne, Victoria, some of the harshest lockdown restrictions in the world were in place, forcing students and educators to rapidly move classes to online. This crisis prompted researchers at the University of Melbourne to orchestrate a research project to explore the question: How are our education and creative industries sectors reacting and adapting to an environment of physical isolation, social disruption, and health and economic crises? As the months of working in this environment passed slowly, so slowly, our team of researchers grew in size and diversity as we formed a collaboration which we called #DataCreativities. We, the authors of this article, are the founding members of this group. Many of us did not know each other before the collaboration, and most of us have only ever met in digital spaces. We were each living and working through some of the harshest lockdowns in the world with stay-at-home orders and travel restrictions in place within an Australian closed border context (Lupton, 2020).

Kate:

I have worked at home for a year across this collaborative. Living and working in the same place with my family and the daily interaction of fresh faces in boxes of Zoom when I met my research teams and classes. Sometimes in back-to-back clocks of time across a day. This small world limited to my home and laptop screen allowed me to see big through eyes of my collaborators and students who were all living and working in different spaces and places. The feeling of closeness yet independence has been an affect that I am keen to continue after this is over. If it will be? Not an over that takes me back to face-to-face collaborations as they were because I know that masks and sanitizer and socially distanced meetings are now a reality, but an agency of individuality within a team that I have relished with/in.

In this article, we figure (*out*) how we formed and sustained a digital collaboration: from the awkward silences and false starts of online meetings, “I wanted to . . .,” “no, you go,” “no, no, please you go,” to this current point of our becoming a collective working with a mixtape methodological approach. We were working on the presumption we were going on this voyage into the unknown, not knowing the destination but committed to traveling together. This article is our hero's journey on the fellowship of the Zoom and our figuring out has mapped our return home (Image 1).



Image 1. Meme created by #DataCreativities (2021) using the following generator: <https://imgflip.com/memegenerator/83940526/One-does-not-simply-blank>.

Note. Memes and GIFs opened an easy way of us chatting to each other. A liberating and multimodal avenue for communication that also introduced humor into a situation that was often not humorous. They became our collaborative shorthand.

The #DataCreativities collaboration explored data traces from the rapid move to online, in the education and galleries, libraries, archives, and museums (GLAM) sectors in Melbourne, because of the lockdowns imposed to combat the initial spread of COVID-19. This collaboration looked at different data sources, including educational data in the learning management systems in use at University of Melbourne, social media data in the GLAM sector, and survey questions as data across education and creative industries. Some of these data sources later became valuable fuel for our research, and some sources fell by the wayside, as we felt our way through the wilds of secondary data. The collaboration included researchers from the fields of art education, music education, library sciences, creative industries, GLAM, learning analytics, scholarship of teaching and learning (SOTEL), data stewardship, and data science.

We aim to articulate our experience as practice-notations (Agid & Akama, 2020) in #DataCreativities and speculate on the future of this and other collaborations. There are two conceptual challenges in both write-ing and rite-ing this article. First, we are telling our (co)story in a linear fashion about an experience that was markedly non-linear,

organizing our recollections through the ritual of writing the story of the collaboration. Time, in 2020, became an irregular oppressor—there being both too much of it as we were confined to our houses and too little of it as personal and professional workloads climbed to new heights (Adisa et al., 2021; İlkaracan & Memiş, 2021; Kabeer et al., 2021). Second, we are attempting to find a collaborative voice in an experience that was intensely singular. We had different professional and personal profiles which were impacted in diverse ways by the multiple crises we were with/in, as we “zoomed in” to the collaboration’s digital spaces from vastly different and distant physical places. As we co-story this article, we continually re-form and re-frame our understanding of our #DataCreativities work through writing the narrative as a collaborative mostly live and synchronously in lockdown, in SharePoint. We reflect on how this collaboration can inform future understandings of CO-llaborative VI-rtual D-esign for ourselves and others (Image 2).

Ladies and Gentlemen, this is Lockdown no. 5



Image 2. Twitter (August 17, 2021), Lockdown #5
(<https://twitter.com/mousavian/status/1415638620719902720>).

Note. With most of the #DataCreativities team based in Melbourne, we entered our fifth lockdown while working on this article, musical memes such as Lockdown #5 resonated with us.

We use the “discursive practice figuring” (Grocott, 2012b) as a framework for understanding and sharing our experience of forming an online collaboration. Figuring is a reflective action/practice developed by Grocott (2010) which foregrounds the sharing of “tentative content” in a way that allows for the “audiences” negotiation of the ideas under construction (Grocott, 2012a, p. 10). Figuring is a performative, reflective, speculative, and storied designerly way of doing, being, and knowing, providing a methodology for the producer to draw on the known while also allowing scope for the exploration of the unknown. As a designer and design educator, Grocott uses figuring as a language for visualizing the abstract, and an experiential process of iterative questing as practitioner. For example, they visualize university management systems to understand the purpose of the graphic (reflective) while leaving room in the visualization for audience interpretation which feeds back into Grocott’s conceptualizations. As Grocott (2010) positions, figuring “emphasis[es] how the visualisations operate as performative research artefacts. The theoretical basis for figuring loosely builds on Rosenberg’s characterisation that the ‘fragile balance’ of creative practice comes from negotiating the centripetal and centrifugal forces at play” (p. 67) (Image 3).

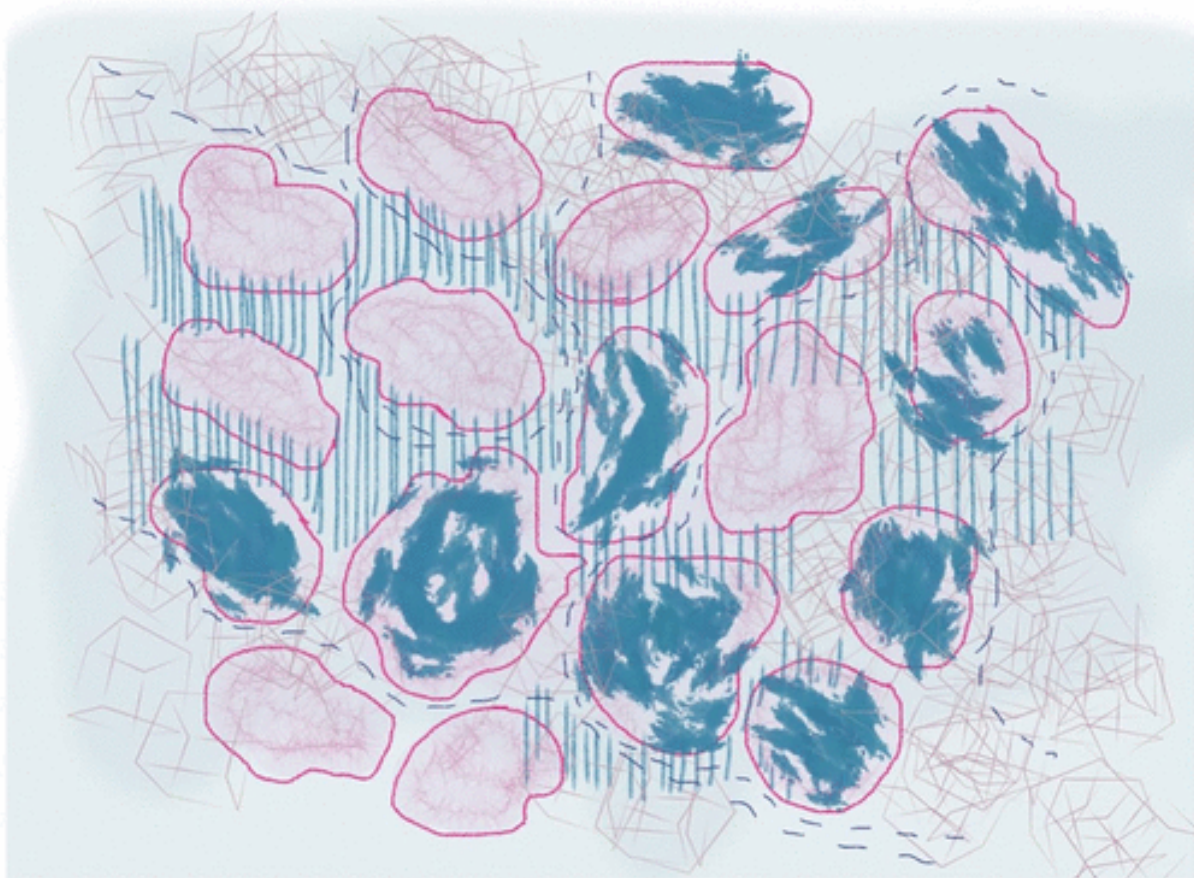


Image 3. #DataCreativities. (2020). Creative activism. *Figshare* (<https://doi.org/10.26188/13048970>).

Note. This visual digital autoethnography recounts the days we had been in lockdown against how many people we had lost to COVID-19 in Victoria to this day. For Kate, counting was a way to sit with the loss and sadness of COVID-19 as the work of the teams and teaching just kept going. The islands of loss are spaces for rest to think about what has changed and been ruptured.

In this article, we use a musical figuring rather than a graphic one. We take the musical trope of the mixtape as our place of figuring (out). We have chosen musical figuring through the mixtape trope for two reasons: because the mixtape concept has transcended analogue and digital formats over time, and because it was music that kept each of us afloat through disorientation and disruption with/in the collaboration.

#DataCreativities inhabited physical, digital, and hybrid spaces. The content that #DataCreativities examined ranged from analogue-digital and physical-online with our own practice/s as collaboration spanning across these mediums as we worked in our homework spaces, as we communicated through Teams and email, as we experimented with working in Mozilla Hubs' virtual spaces. Our physical spaces extruded into the online meetings with offspring asking for snacks, kittens that lightened our mood and changing "work desk" positions in our homes that changed our Zoom persona's backgrounds. The mixtape is a trope that similarly spans these spaces, representing an analogue phenomenon that has transcended the shift from cassette tapes to digital formats as playlists. Many of the mixtapes we have created over the years (more for some of us than others!) are eclectic mixes of songs that we want to share with others. The themes of these mixtapes emerged through the act of creation as maker and through repeated playing as recipient. #DataCreativities created a space for our collaborators to bring their experience and methodologies from diverse fields of research to find our common ground. Our mixtape method is the outcome, a hybrid approach for this research project, where agilists and makers have engaged in speculative research to create an ecology of resources and archive this moment in time.

Thom:

My experience of online remote collaboration with the #DataCreativities team was based in New Zealand—where due to COVID-19 border restrictions and lockdowns I worked remotely for my new institution after starting a position at the beginning of the New Zealand level 4 lockdown. Being part of this remote collaboration was definitely a sanity line getting to know a group of peers that I had never physically met. Music was a key lifeline for me during this experience, and I created a "Postcard" with a link to a short musical composition to illustrate this (Image 4).



Image 4. Cochrane, T. (2020). Postcard from NZ during the pandemic. *Figshare* (<https://doi.org/10.26188/13331231.v1>).

Music was a liferaft that we could cling to, as the waves of COVID-19 infections disoriented us and disrupted our sense of safety. We found comfort in familiar music which held personal significance. We found catharsis in making and producing music that told of our mood. We slipped into our memories to re-story relations to songs and albums that had seen us through other pivots in our becoming and being. We created our own music and curated our own playlists to help us navigate this new landscape. The songs or pieces of music that we experienced and consumed during our “reminiscence bump”—an age range that spans late adolescence to early adulthood—hold a special place in our memories of self. They are so powerful in reconnecting with both our memories and affect that they are more likely to trigger autobiographical memories than other stimuli, such as photos (Baird et al., 2020). During Lockdown, the #DataCreativities team turned to music, a trend that was mirrored in the population in general (Vidas et al., 2021) for a collation of coping songs, many from formative years, as a source of comfort. These songs form a reminder of who we are, a recollection of our core identity in a time of super complexity, upheaval, and chaos.

Julian:

I returned to the university after a spell in the private sector to lead a small learning design pod as part of a 5-year project largely around the collaborative development of 100+ new, signature, fully online university subjects. This was 12 months nearly to the day before COVID-19 hit Melbourne and in early April 2020, the university's pivot turned from signature fully online to surviving fully online, from elegant design to urgent deployment, and from pedagogy to pragmatics. Necessarily. Since the commencement of 2021 and once the 2020 student analytics and qualitative data were crunched, fully online subjects, certainly the new and undergraduate, lost their luster and novelty. For me, the data collected from the 2020 online learning and teaching experiences remain contingent and particular, given circumstances, and not a reason to curtail explorations of crafted fully online L&T (Image 5).

2019: fully online asynchronous uni subjects

2020: fully online asynchronous uni subjects



Image 5. Meme created by #DataCreativities (2021) using the following generator: <https://imgflip.com/memegenerator/170378536/Monkey-looking-away>.

This article begins with an exploration of the methodologies in our mixtape. Here, genre is used to understand how these methodologies complement and contrast each other. We then present the mixtape. Side A reflects on our experiences and invites speculation on their interpretation. Side B draws out the themes that arose throughout the collaboration, again using music to accompany audiences as they negotiate through these tentative ideas. This article concludes with a commentary on how to re-configure our experiences to develop robust digital collaborations in the future.

Mixing Genres—An Anthology of Methodologies

#DataCreativities drew on a range of methodologies and methods. We came to the collaboration determined to segregate our a priori ways of working. We came into a consciously uncomfortable space of unknowns. With discomfort and time, we were able to see the promise in interdisciplinary methodologies we would not normally embrace. As different genres can fit well in a mixtape, each of our methodologies and methods contrasted but complimented the others. In this section, we outline the main methodologies that appear on our mixtape figuring (Image 6).

Kristal:

What is it that they say in theatre? If it feels uncomfortable, you're doing it right? This rings true for interdisciplinary work too. We experimented with methods that I'd never worked in before. I remember trying to figure out the point when I had learnt enough about one method that I could talk about it in a presentation, or a paper, or even to my own team. A bit like knowing enough about a genre to compose a piece in that style, but not become an expert. It was hard work accepting that I couldn't plan the work from beginning to end—I just had to take it one step (one phrase, one bar, one beat) at a time. It took practice learning to be OK with this. Just like our new COVID normal lives I guess . . .



Image 6. Belton, A. (2021). Anthology of methodologies. *Figshare* (<https://doi.org/10.26188/14854536>).

Note. We channeled our inner selves from the 1990s to design an album cover displaying our anthology of methodologies used in the collaboration. True to the #DataCreativities style, it's both a meme and a GIF.

Communities of Practice

In the 1990s, Lave and Wenger developed the concept of the community of practice: a group of people who are drawn together by a shared interest (Lave & Wenger, 1991; Wenger, 1998). A community of practice is commonly understood to have three key components.

- *The domain:* The area or topic of interest,

- *The community*: The relationships built between members through their interest in the domain,
- *The practice*: The skills and knowledge being shared.

Our collaboration is above all an evolving community of practice. We were drawn together by a shared domain interest. This shared interest engaged us and united us as we built trust in the collective and trust in each other. One Monday meeting stands out, a time in early August when we were each avidly, desperately following the COVID-19 data. We were all experiencing the suckerpunch of the latest big jump in COVID-19 cases in Melbourne: 657 new daily cases. As members shared their despondency, disappointment, and sense of defeat, we forged a stronger collaboration, a resolution to make a difference, through researching and documenting this time in our working lives. This trusted environment drew us into a virtuous cycle of sharing. Sharing our skills and knowledge built our relationships and interest in the area, and developing our relationships and interest promoted skill and knowledge sharing. Our community had a common concern for understanding and navigating the ethical landscape of data-driven research. The community of practice for this research was the scaffolding through which the methods were introduced and implemented, just as a good mixed tape acts as a scaffold through which various genres can be curated side by side.

Our shared resolution to make a difference spawned a creative flurry of introspectively generated creations: including visualizations, audiations, and mashups. We were inspired by each other's outputs, creating fresh outputs that referenced and expanded the initial creative works (Image 7).



Image 7. #DataCreativities. (2020). Colab mashup. *Figshare* (<https://doi.org/10.26188/13193582>).

Note. This digital introduction to #DataCreativities draws from visual and auditory sources that epitomize our collaboration, where the summary text of our collaboration is mirrored, highlighted, and disrupted by a ZOOM theme ostinato and compilation of the 34 GIFs that had populated our Teams correspondence up to that point. The overall composition is raw and unpolished, reflecting Solange’s ineptitude at using GarageBand and Camtasia, the unusual meter of the Zoom theme (5/4 time, yet not quite on the beat!), and the challenges that arise from creating in a professional/personal work/home mashup environment.

Ecology of Resources

Our community of practice cultivated an ecology of resources. The Ecology of Resources refers to “a set of inter-related resource elements, including people and objects, the interactions between which provide a particular context” (Luckin, 2008, p. 451). A key element in the ecology is how different resources relate to one and other. This relationship plays a role in the structure and scaffolding of learning and teaching. Forming an understanding of our playlists of data sources and technological tools, as an ecology of resources, helped us evaluate, exploit, or simply drop the sources of secondary data we were exploring and the tools we were experimenting with and through. #DataCreativities collected a range of resources—from virtual spaces like Mozilla Hubs, to the digital spaces of Teams and the video conferencing platform Zoom. Our resources were like our musical instrumentation—We mixed them in contrasting and complimentary ways to get the most out of our community of practice. We built our own ecology of resources to structure our collaborative work; this was a scaffold for the stages of the collaboration (Image 8).

Figuring With/in Action/Practice Research

Action/practice research has its roots in educational research. It is a method designed to situate the researcher as an active participant in the research cultures, rather than as a spectator on the outside. While there are many forms of action/practice research, it is generally concerned with the researcher's local environment (Cohen et al., 2017, p. 440), for example, a teacher researching their own classroom or teaching practice.

Action/practice research is principally focused on co-constructing knowledge and on producing tangible impacts on and for practice (Cohen et al., 2017, p. 441).

Through making, modifying, adapting, and figuring our visualizations, our writing and our research created new practice knowledges through our action-oriented theory and practice loops. However, figuring with/in action/practice research is a dance of looping between reflective sites. Our research progressed as we examined the data generated from the impact on the institutions we visit, learn in, and work at as we theorized and reflected in-action and on-action (Schön, 1987). The things we created fed into a generative cycle of remaking and mashing up earlier creations. Just as the Beatles made and stretched the sounds of Strawberry Fields, we are making and remaking, forming and reforming our understanding of the impact of the pandemic and the shift to online through action/practice research.

Emily:

I had started working in my role as a “Research Data Specialist” in February 2020, and so when this collaboration began was still relatively new, and still relatively new to the idea of myself as a data professional and academic. The friendliness and genuine collaborative nature of this collaboration helped to calm some of the anxieties of imposter syndrome (though could exacerbate some others!), and the regular meetings were an opportunity to listen to and engage with fascinating discussions from so many perspectives (though also so friendly that there was always the other risk of working from home—being so loud that I might disturb my housemate working in the room next door!).

Maker Movement

As we navigated our research landscape through the ups and downs of COVID-19's spread and containment, we continued to make data visualizations and representations of our explorations. The Maker Movement is viewed as a resurgence of people engaging

with creating and tinkering, oftentimes facilitated by technological innovation (Turner, 2018). As access to technology becomes easier, more people can engage with the Maker Movement—both through the ability to share ideas (such as tutorials and blogs) and through access to making technologies (such as three-dimensional [3D] printers and accessible code). Our making came from a long lineage of makers (Dougherty, 2012). Just as we have been makers of mixtapes, we are also makers of collaboration and knowledge.

Kristal:

I like the word tinkering—pulling things apart to see how they work. I tinkered with data a lot. Teams data, social media data, COVID data, whatever we could get our hands on. Thinking through the process of tinkering is liberating. It gives you license to embrace the process, to deconstruct data as an act of reconstructing knowledge. I pulled data just to see how it worked. YouTube and Instagram were particularly interesting to play with. That data is still sitting on the share drive—It hasn't yet made it to publication. But that doesn't matter. The act of tinkering taught me a great deal, and . . . it was fun.

When the changes wrought by the pandemic were difficult to comprehend, there was solace in making things that made sense of COVID-19 data. There was joy and relief in making tangible artifacts, such as our data visualizations, our analyses of data, and GIF mashups. Posting memes and making GIFs were small acts of creativity that lightened the load of life in lockdown. When all about felt incomprehensible, making the smallest thing made sense and built camaraderie. Our collection of outputs can be found on our curated Omeka site (#DataCreativities, 2020). Our #DataCreativities team then took these approaches to making a feedback loop workshop for staff at our university to share how we made visualizations using tools such as voyant.org. Like the makers in Turner's Millenarian Tinkering, we shared a passion for creativity and delighted in sharing what we learnt with others in the teaching and learning community.

Agile

Agile is an approach sometimes used in the practice of software development. It embraces frequent releases and collaborative approaches, operating on the principle that sharing progress at each step in the work promotes timely feedback, continuous learning through reflection, and builds momentum (see, for example, Beck et al., 2001). Learning from agile practitioners, each iteration of our collaboration could respond to what was learnt in the previous iteration. We were individuals responding to the stylings of others in the

team, improvising and building on the motifs of our jazzy collaboration. Each data visualization, Teams post of useful resources, and team discussion were short time-scale inputs into our thinking and into our work. When we were unsure of our goal, of our work, an iterative approach helped us steer the course. Each new iteration would shape the direction of the next step. These information artifacts and data visualizations from individuals equate to the working software of the agile manifesto. These sometimes-solo riffs were incorporated into the collective musings and stylings of the collaboration (Image 9).

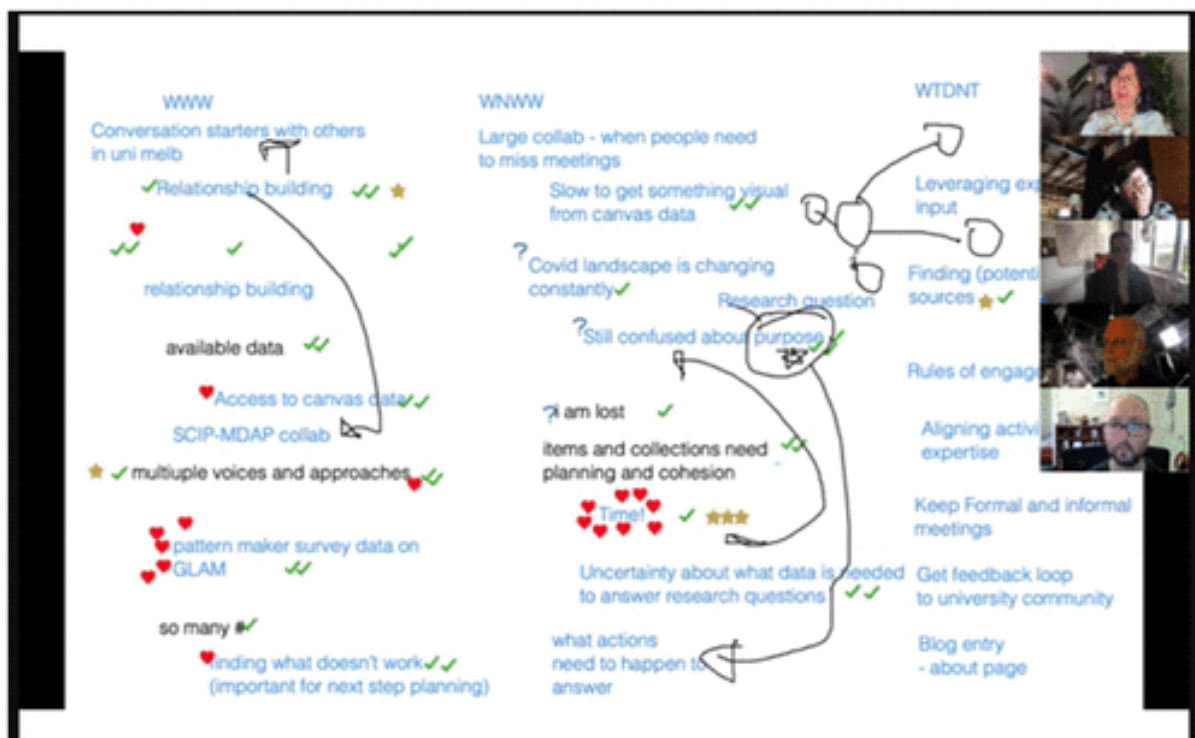


Image 9. #DataCreativities. (2021). #DataCreativities retrospective. *Figshare* (<https://doi.org/10.26188/15001125>).

Note. As individuals, we cycled through moments of feeling lost, of standing alone clapping out of rhythm while the rest of the band plays on. A retrospective discussion in early August, on what's working well and what's not working well, gave us a chance to voice these feelings. Through figuring out, how we were feeling about the research, through making, we started to find our rhythm. This iterative, agile approach produced feedback loops which allowed us to monitor and respond to change.

Going Beyond the Scientific Method

The scientific method is a method of systematic testing, hypothesizing, deducing, and inferring (Oxford English Dictionary, n.d.). Our collective included researchers with a scientific background, who brought the scientific method into our playlist of methods.

Amanda:

2020 was my first year working in academia and data creativities was my first collaborative research project as a data scientist at the university. Working and studying during the pandemic was an accessible wonderland, I could pace my work and study commitments with asynchronous engagement and every meeting was conducted in easy-to-access online spaces. Even so, in retrospect, the cognitive load of reconciling the need to shelter-in-place while re-organizing events and family visits with each extension to restrictions and each re-entry into lockdown, meant many challenging days. Making and thinking through the data traces from the shift to online was a liferaft of our own making when new methods and new conceptual models felt overwhelming. This was a kind learning environment to explore the conjunction of data science and creative approaches. This collaboration with experienced and early-career academics who modelled diverse ways to engage in creative, data-driven, interdisciplinary research was a supportive and occasionally joyful experience in tough times for which I am immensely grateful.

The scientific method is employed differently depending on the discipline in question; given the interdisciplinary nature of our collaboration, and the exploratory nature of our open-ended research questions, we chose to flip the traditional model on its apex. In our collaboration, we began with data which we interrogated and examined, as well as used as a source of inspiration for creative interpretations. This was as unsettling as it was freeing. We did not want to create new data, we wanted to create *with* data, and allow the data to tell its own story. It was in late August, when COVID-19 cases were dropping in Melbourne, and lockdown felt worth it, we encouraged each other to experiment, to make an individual something, that, in retrospect, fed the collective presentations, papers, and videos we could then make together. Often in music, it's deviation from expectation that creates the sweetest resolution—We embraced deviation by creating with, not from, data.

The Mixtape

At the heart of the mixtape is our emotional response to our work and our time during that tumultuous period. From our initial group tuning sessions to the performative feedback loops of sharing with the research community, our mixtape of emotions tracked the journey of our collaboration. Just like a good mixtape, our collaboration was built on a series of musical snapshots that captured each of our unique lived experiences during the global health crisis. We hope when it is played—both sides—it conveys the underlying

narrative of creative collaboration. As knowledge makers, relational feedback loops and “mixtape methods” can create new ways for doing, being, and knowing from one data site to another. Doing research during a time of disruption and anxiety using an iterative approach allowed us to adapt the methods as our work and life circumstances changed in response to the pandemic, throughout the uncertainties of life in lockdown we collaboratively co-designed our work.

Side A—Looking Back

Each of the #DataCreativities team used song to look back on the experience of CO-laborative VI-rtual D-esign. In this section, we articulate our experiences with the songs that helped us through the early COVID-19 lockdowns. As we reflect, we use song to make room for speculation and to invite audiences to negotiate these ideas alongside the #DataCreativities team (Image 10).



Image 10. Coleman, K. (2021). Zoom Annotation mixtape. *Figshare* (<https://doi.org/10.26188/15001761>).

Note. #DataCreativities used the Zoom Annotation feature a lot to co-create. Here, we explore our mixtape ready to be filled with songs. Image annotated from Namroud Gorguis on Unsplash (<https://unsplash.com/photos/FZWivbri0Xk>).

Find an Island—Benee

The project was a figuring and re-figuring of how to collaboratively conduct research online. Social distancing with the lockdown was isolating; this collaboration felt like we found an island together for short bursts each week as we found ourselves back in Zoom at the same time and day. Some of us were homeschooling while researching, some of us remote emergency teaching, many of us were studying online, and all of us were working online. We were grappling with the conditions of the pandemic while looking at the data created through the pandemic-driven shift to online.

This was a project of loops and circles, as we worked through the cycles and donuts of data-driven research. Our feedback loops were the work of *figuring (out)*. Even when lost—perhaps because of it—we could cling to the concreteness of making and remaking representations of the data we were exploring. We created data visualization figures that moved through stages of discussion, mashups, and writing as we made sense and sense-made with data. The feedback loops within the collaboration were supporting us through the uncertainty; if we missed something, we could reconnect with/in the discussion loops.

Safety Dance—Men Without Hats

We didn't know each other, but we could trust that each of us was bringing our expertise to the collaboration. This “kind” learning environment (Epstein, 2019) was constructed for the teamwork of setting boundaries and modeling behaviors to give safety while we bounced around the uncertainty of forming a collaboration online. Whether it was the collegial laughing-with someone accidentally stuck on a virtual roof, or the flurry of animated GIF responses to a particularly stellar choice of meme. Each of us had different ways of figuring things out; our collective figuring brought these individual paths into a joint journey. Through iterations of figuring out, our individual and collective action has ebbed and flowed.

Let It Go—Elsa

A safe, positive, functional collaborative group allowed individual strengths to shine while there was also an uncomfortable unlearning, an unwinding of the role of sole expert. This unwinding felt overwhelming at first, as acronyms and alien terminologies left each of us floundering at different times. There was safety in letting go of expectations during disruption and uncertainty. There was freedom in accepting and acknowledging when we

don't know, that we don't need to be the knower of all knowledge, that we are all exploring the unknown together with a commitment to reciprocal learning.

Stuck in the Middle With You—Stealers Wheel

Our diverse areas of expertise formed circles of knowledge and making the area in the middle of our circles was an important part of our figuring out. We identified our emerging ecology of resources, starting with Teams as our collaboration space, even as we experimented with new technologies (Luckin, 2008). These new spaces opened different perspectives, allowing us to see different possibilities: quite literally when co-author G.M. (Gene Melzack) was marooned on the roof in the 360 space of our Mozilla Hubs located meeting.

The Gambler—Kenny Rogers

During 2020, we didn't do less, we did differently. In the collaboration, we tried different research avenues, we held them when they were fruitful, and we folded them when they were not right. We had to be bold in trying new directions, and we had to be open to viewing the hand we'd been dealt from different perspectives. On one hand, online collaboration reduced the in-person community that can come with close collaborative practice. On the other hand, it opened possibilities of a different community—one in which people from a range of regions and different physical abilities could participate and where we could explore the nuances of digital community building. Through the collaboration, the line between research and real life eroded with each wave of COVID-19. Our research narrative and COVID-19 narratives were shuffled together. In any crisis, the positives, the aces in the deck, can be hard to find. But once found they should be held onto. Our aces include the value of digital collaboration, the increased accessibility brought about by online events and opportunities, and the examples of ingenuity which recast the creative industries for the digital medium.

Canto Ostinato—Simeon ten Holt

From the inside, our collaboration allowed us to reimagine the expectations we placed on ourselves and our community of practice. Letting go of expectations created a sense of safety and was only possible because of the trust and respect we had developed through an ethics of care. None of us had a similar academic profile; we were a unique mashup of academic backgrounds, with different demands on our skillsets. A canto is a song, a voice

part, or a major division of a long poem: Our story is told by different voices, and it is long and ongoing, stretching out for an indeterminate length as we reflect on the genesis of our collaboration and look forward to an unknown future. The tempo for our song was set as a team early in our collaboration, a cadence of regular meetings. An ostinato is a motif that repeats persistently: COVID-19 was our ostinato, but each unique voice in the collaboration varied or transposed the COVID-19 theme through the lens of their own lived experience through lockdown. We couldn't stop the incessant ostinato, but the juxtaposition of voices created a rich harmonization that allowed us to endure lockdown with direction and focus.

Side B—Mixtape Entanglements

In this section, the #DataCreativities team considered themes that emerged throughout the collaboration. As with all mixtape side B's, the flipside is carefully collected and curated to guide reflection and speculation. Side B is experimental—an opportunity to try something new (Image 11).



Image 11. Pădureț, D. (2020). Unsplash (<https://unsplash.com/photos/XKCH37dHt7w>).

Note. We gradually undertook a process of becoming en-tangled, un-tangled, and re-tangled in the collaboration. There was freedom in knowing that this was a valued part of the collaborative process.

Strawberry Fields

The song was inspired by the childhood memories of John Lennon, who used to play in the garden of a Salvation Army children's home called Strawberry Fields. Strawberry Fields sounds like tape being stretched, creating a thought-provoking aural sensation. All well-played mixtapes can get stretched, loose, and tangled with repeated plays. To tighten a loose mixtape, The BIC Cristal pen has been a handy tool for many as the spool needs tightening. Aptly named, in our collaboration, co-author K.S. (Kristal Spreadborough) was the BIC pen—letting the tape loosen, leaving us tangled up in the messy in-between as our research formed. After wandering and wondering in space, K.S. would reset the tension, winding back in our loose wonderings into this playable anthology.

Mananana—The Muppets

There is a theory in network analysis called the strength of weak ties (Granovetter, 1973). It describes how two groups might be connected by only one individual, but that this single connection is strong because without it the two groups would be completely isolated from each other. A mixtape is held together by a series of weak ties: Diverse songs woven together by a common thread. In our collaboration, co-author S.G. (Solange Glasser) was the thread that wove through all our discussions in our Microsoft Teams workspace. At one point or another, S.G. had commented on each of our posts and kept us connected across our diverse sites. Her ties strengthened our group and her rendition of the Muppets's call and response of *Mananana* brought levity and joy to our meetings (Image 12).

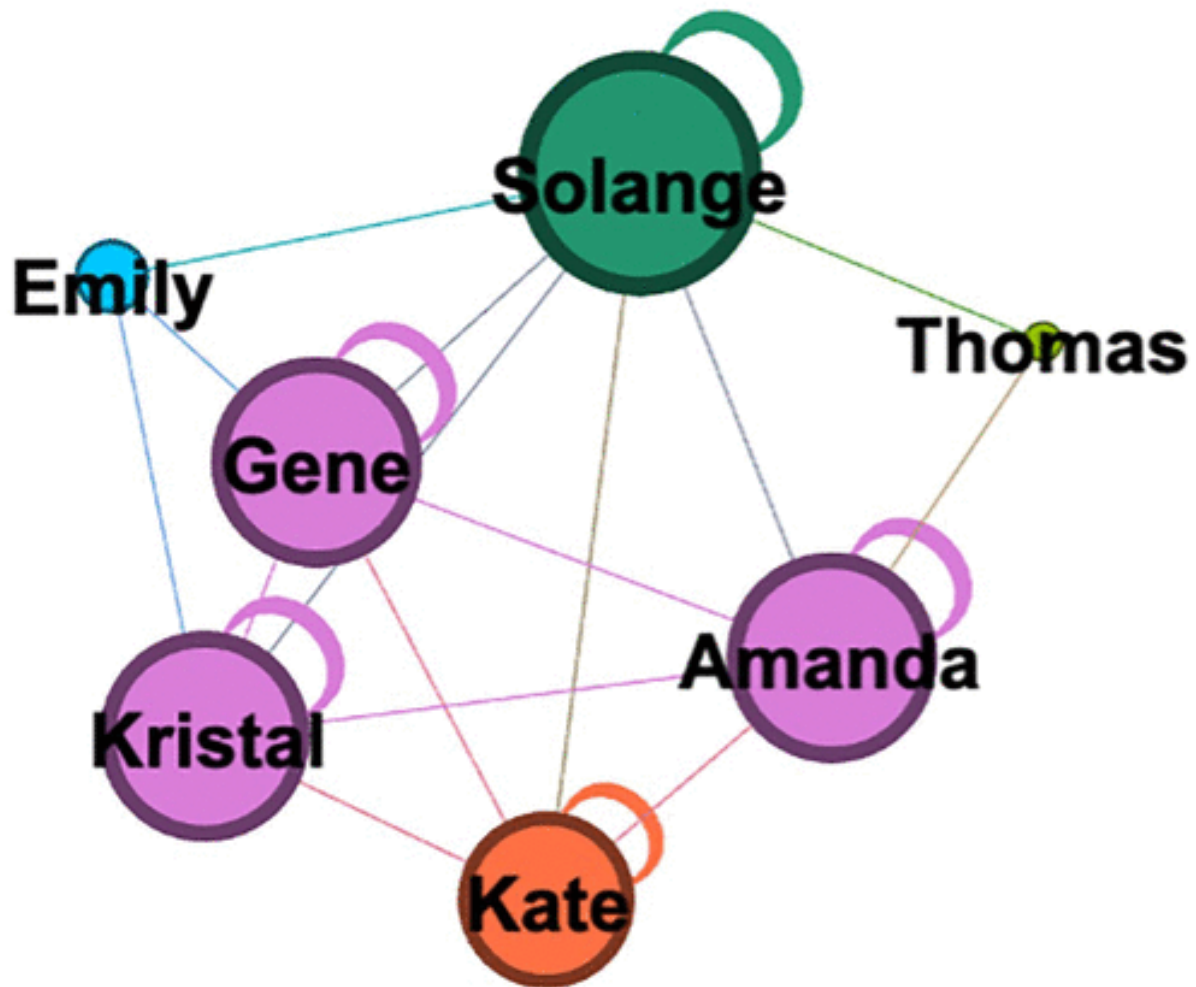


Image 12. Spreadborough, K. (2020). #DataCreativities interactions on Teams. *Figshare* (<https://doi.org/10.26188/14888106>).

Note. We examined our communication patterns over the first few months of our virtual collaboration to understand how we interacted. Gene Melzack (co-author G.M.), Kristal Spreadborough (co-author K.S.), and Amanda Belton (co-author A.B.) talked to each other a lot (represented by the same color, pink). Solange Glasser (co-author S.G.) has connections to everyone.

She Blinded Me With Science—Thomas Dolby

Implicit in the data science method is an adherence to the scientific method. A post-positivist approach where knowledge is viewed not as a construct where the people doing the research influence the kind of knowledge created but as an objective fact that is (or at least should be) uninfluenced by the people doing the research. In a number of ways, COVID-19 has disabused data science of this perspective. On the most fundamental level, we see this simply in the patterns of research that have emerged in 2020. In our collaboration, we observed how COVID-19 mediated our engagement with research over the second Melbourne wave (Image 13).

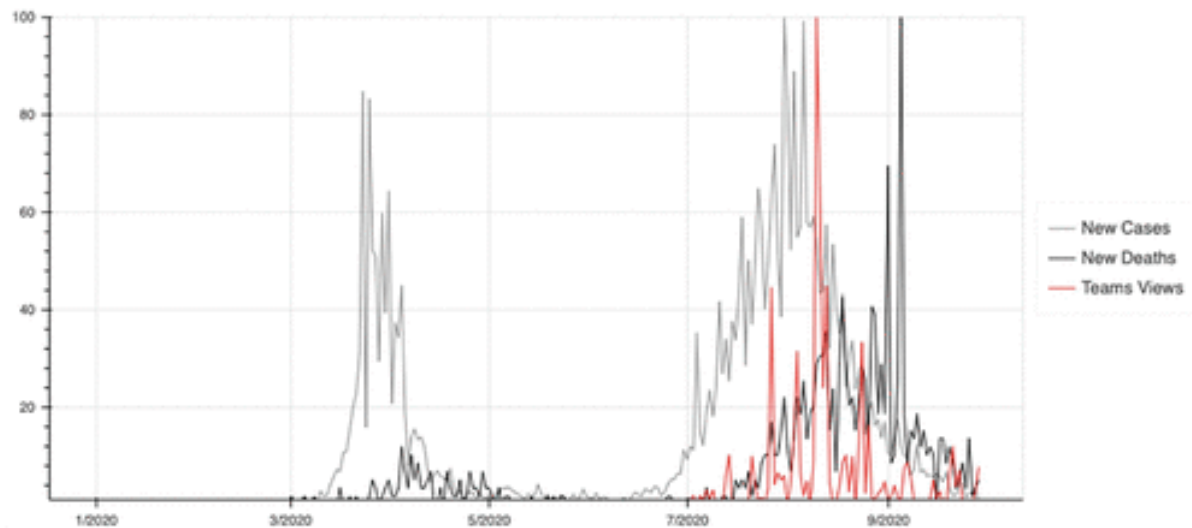


Image 13. Spreadborough, K. (2020). Engagement. *Figshare* (<https://doi.org/10.26188/14888124>).

Note. We were interested in our patterns of engagement over time, and our Teams site provided a good data source for this. The x-axis shows the date that we engaged with our Teams site. The y-axis shows the percentage of total views/cases/deaths at any one time. The #DataCreativities collaboration started in June. The most Teams engagement occurred right after the peak in cases around August 2020. To make our datafied experience human again, we set our engagement data to music (see “Engagement set to music” at <https://doi.org/10.26188/14898750>).

Tell Me How It Ends—Bernard Fanning

In retrospect, we were still talking about “post-COVID-19” being a month or two away and assumptions like this crept into our data analysis. The outcomes of our research into the shift to online were the product of our experience grappling with online meetings and the struggle of quickly setting up a workspace in the home environment (Image 14).



Image 14. Belton, A. et al. (2021). COVID chronicle for #DataCreativities for August 3, 2020. Figshare (<https://doi.org/10.26188/14897760>).

Note. When we look back to our annotations on the COVID-19 data, we can see the resulting shift in perspective as a daily jump in the number of cases in late July is now seen in the light of many months of change numbers. We can see this when we look back at the #DataCreativities Team Annotations on COVID—Data for the week starting August 3.

We were each, daily, coming to terms with the uncertainty of a changing world, and our shifting perspectives are built into our research outputs. As we examined the learning system data for announcements made by lecturers, we can see parallels with educators apologizing for not meeting pre-COVID-19 expectations of routine operations of classes and forward notice of schedule or location changes. We witnessed many educators holding themselves to expectations that simply could not be met. Our expectations of ourselves, of the working and learning environment, could not adjust at the pace of those daily and hourly changes. Educators were adapting to rapidly changing university and government directives as the threats of the pandemic escalated. These directives meant that classes could not be run in person with the facilities, equipment, or instruments available to students and teachers just a week earlier. The data in aggregate showed the personal response of educators as they guided students through the shift to online, with heartfelt apologies for when online classes were disrupted by technology and thoughtful support for the well-being of students who were also navigating the rapidly changing individual, family, home, and study conditions.

Rewinding Our Mixtape of Emotions

Each of us in this collective was living and working through the anxious and stressful early stages of the pandemic. Just like our research project was figuring out meaning from the data traces left by the education and creative industries as they were reacting and adapting to an environment of physical isolation, social disruption, and health and economic crises, so too were we collectively supporting each other through the highs and lows of the time. As friends lost beloved family members to COVID-19, as offspring got called to (virtual) meetings with their school principal, as colleagues experienced the loss of loved ones, this was not an easy time through which to live and work. We formed as a collective through reacting and adapting, together and individually, to an environment of physical isolation and social disruption Image 15.

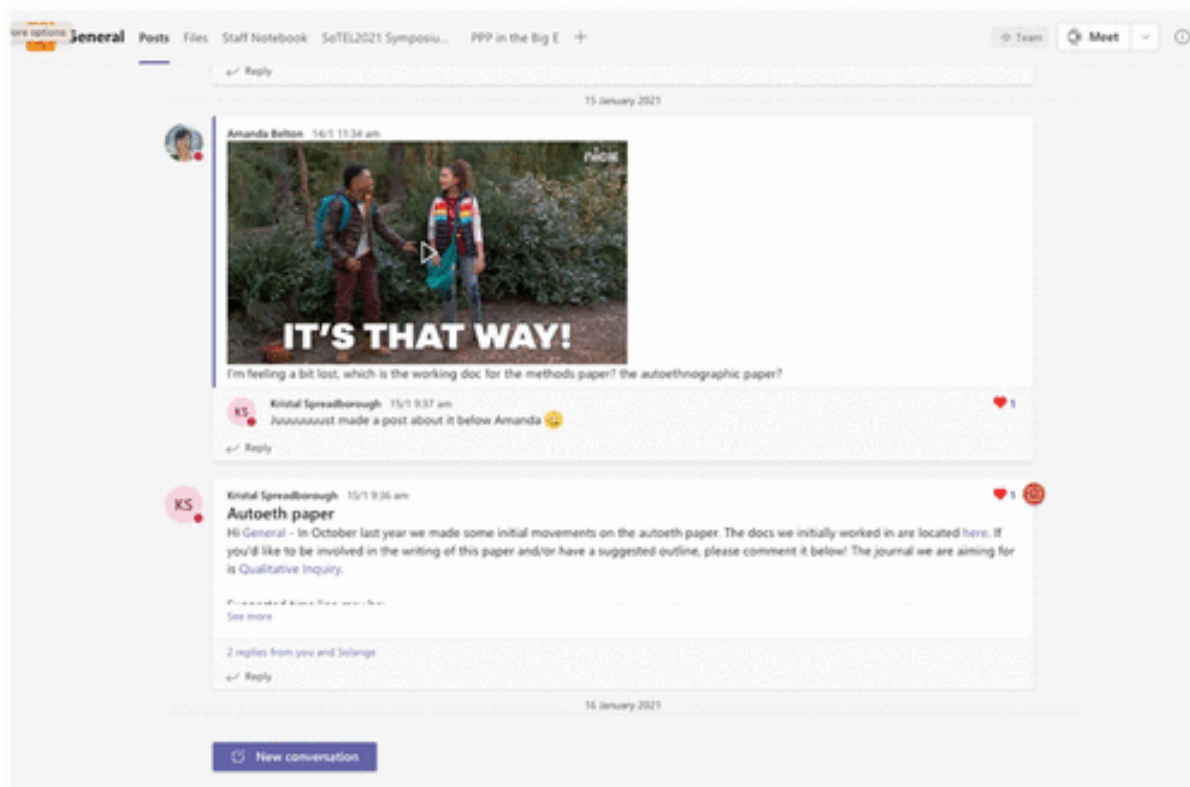


Image 15. Belton, A. (2021). Screenshot of teams chat “I am lost.” *Figshare* (<https://doi.org/10.26188/15001167>).

Note. This mixtape embraces the affective side of this research project. The intense lows of increasing COVID-19 infections and deaths were written on our faces, visible to each other over Zoom. We freely shared feeling lost at various points in the collaboration and in our collective journey through the COVID waves. Teams was a focal point for us, a place to come together and reach out to our colleagues—who became friends. These lows were faced with the emotional support from each other and from the more melancholic selections in this anthology. The joyful highs, as daily COVID-19 numbers finally began to drop, were celebrated with animated GIFs and choruses of Mananana.

As we reflect on loops and cycles of our data-driven research, we can see the diversity of thought that shaped the work. This collaboration medley is unified by the co-creation of meaning from the data as we made sense of the rapid shift online and is peppered with acknowledgments of feeling lost. The modeling of collaborative, connecting behaviors built a space for this diversity of voices: a safe, kind learning environment where we could let go of being an expert and embrace the opportunities to learn.

Gene:

I am a professional staff member, a Data Curator. My role in relation to research collaborations is usually supporting or advisory, on the sidelines. Instead, with #DataCreativities I felt like I was genuinely valued as a full member of the collaboration. This wasn't just about what I could contribute in my professional role but also about what I brought to the collaboration as a unique individual, with my own perspectives and life experiences. So as well as my technical skills and best practice knowledge of data curation, I also felt safe to bring my lived experience as a member of the LGBTQI+ community and as a disabled person to the table, both in my reflections on the data and in when and how I was able to engage with the collaboration.

Our community of practice adopted an ecology of resources to support us through our research, finding a common space between our individual fields of expertise. We were a team of makers undertaking action/practice research by acknowledging the impact of our local environments on our research outputs. An iterative, agile approach gave a structure to our wandering through the data traces left from the move to online in education and the GLAM sectors. As a collective of researchers with diverse backgrounds and areas of interests, we adapted the scientific method to give our approach an openness to the stories the data could tell us while maintaining the rigor of cycles of hypotheses, experiments, and analysis.

This mixtape is a representation of the events of 2020, wrought around a theme that weaves together our individual and collective experiences. This is a mixed tape paper, a time capsule, that we can dig up again perhaps at a future time when we can meet in person. The mixtape method is steeped in nostalgia, and many of our musical offerings are equally as nostalgic. This artifact of an historic moment will be fostering nostalgia moments in the future.

Seven Steps to Write a Hit Collaboration

Through our musical figuring as we reckoned with the messiness and complexity of our research, we have each learnt so much. To consolidate this new knowledge, we would like to teach you, our kind reader, how to shape and form your next collaboration.

These are our seven easy steps to build a hit collaboration.

1. Find the courage to be a newbie: It takes courage and resilience to use new platforms, to learn from colleagues from different disciplines. Demonstrating a willingness to be lost, to experiment, to say “I don’t know,” opens the door to learning opportunities and emergent research outcomes.
2. Find your tempo: In the early discussions, agree how often you need to meet to achieve your research goals. If you can establish regular timeslots for collaborative work to carve out time in busy diaries, it saves scheduling headaches and makes it easier for collaborators to connect back in after holiday or work-driven breaks.
3. Build trust in the collective: Actively build an environment of trust by modeling the behaviors of researchers who value learning and welcome curiosity. Interdisciplinary research can be disorienting so everyone needs to be able to trust that the collective is able to finding their way together.
4. Champion a diversity of voices: Make space through pauses, questioning and encouraging the different voices in a collaboration to engage in ways that suit their circumstance. Diverse perspectives make for unique insights that come from the novel combinations of experience and expertise.
5. Worry about ethics: Consider the impact and significance for yourself, your team, the university, and, more broadly, how you use the data that underpin the research. Researchers are not independent from the data being studied. The interrelationships between the producers, owners, and consumers of data can be complex: Worrying about the ethics maintains engagement with this complexity to give robust results that can be trusted.
6. Set goals for outputs: Begin and end the collaboration with a focus on common goals to wrangle the work into tangible outputs that encompass diverse perspectives.
7. Celebrate joyful moments: Moments of levity and fun will provide ballast for the inevitable challenges as well as strengthen the ties between members of your research team. As André Gide urges, embrace the moral obligation to find joy.

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#DataCreativities

We acknowledge that we live and work on the lands of the Wurundjeri people who have been custodians of this land for thousands of years and acknowledge and pay our respects to their Elders past and present.

On these lands that hold stories across time and space, #DataCreativities is a co-lab of interdisciplinary digital research at University of Melbourne (UoM). Through a cross-faculty UoM partnership, we examine what #datacreative learning looks like in a pandemic and can look like post-pandemic using digital feedback loops.

This article is co-storied by the following authors in aleatoric order: Kristal Spreadborough, Thomas Cochrane, Solange Glasser, Damian Sweeney, Julian Harris, Amanda Belton, Kenna MacTavish, Kathryn Coleman, Gene Melzack, and Emily Fitzgerald.

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Amanda Belton is a Data Scientist, at University of Melbourne, working with education and arts researchers to visualise research information. She works with playful approaches and empathetic design principles to communicate research data visually into the digital realm, with a keen interest in animation and mixed reality

Kathryn Coleman is an artist, arts-based researcher and educator at the Melbourne Graduate School of Education, University of Melbourne, Australia. Her research into practice includes teacher practices, creative practices, practices of identity, knowledge as practice and digital practices. Kate's praxis includes taking aspects of her theoretical and practical work as a/r/tographer to consider how artists, artist-teachers and artist-students use site to create place in the digital and physical.

Gene Melzack is a Data Curator at the University of Melbourne. His work in records management and digital curation over the last decade has involved developing and delivering training on managing information and data so that it can be preserved long-term. He believes everyone has a role to play in creating, managing, and preserving digital

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Emily Fitzgerald is a historian and Research Data Specialist in the Melbourne Data Analytics Platform (MDAP) at the University of Melbourne. Her research on the transnational connections between Australia and the United States during the development of federation fostered her interest in the digital humanities. Emily is keenly interested both in what technological tools and skills can bring to humanities research, and in what humanities scholars can bring to technology development.