



**DIGITAL CHILD WORKING PAPER SERIES 2023-12**

# Seeding transdisciplinary culture: Lessons from the Digital Child Centre transdisciplinary workshops

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## A MESSAGE FROM PROFESSOR SUSAN DANBY, CENTRE DIRECTOR

In 2021, the Australian Research Council (ARC) funded a Centre of Excellence devoted to studying and researching ‘the digital child’. The focus of this Centre is on very young children from birth to age 8, and describes and examines their everyday lives with and through digital technologies, their learning and their health in the family, and various kinds of kindergarten, childcare and early primary education experiences.

The Centre brings together six universities across Australia, as well as partner investigators from North America, Asia and Europe and a range of public bodies and civil society stakeholders, to focus on a holistic understanding of what it might mean to ‘grow up digital’ today.

The Digital Child Working Paper Series reports on our work in progress. There are five series of papers aimed at different audiences:

A **‘how to’** series offers instructional papers aimed at early career researchers or those new to the principles and practices of structured review.

A **‘discussion’** series consisting of discussion papers aimed at the scholarly community, raising larger conceptual challenges faced by researchers at the Centre and drawing on forms of literature review.

A **‘reviews’** series consisting of scoping reviews, literature reviews and systematic reviews, all addressing specific research questions particular to any of the programme disciplines in the Centre.

A **‘methods and methodologies’** series consisting of digital research capacity building resource-rich discussion papers, offering more technical support for the research community and allied scholarship. These are more focused on methods and methodologies.

A **‘policy’** series consisting of more public facing, policy-oriented papers produced for stakeholder engagement.

Each of the working papers has been authored by members of the Centre and has been subject to review as explained in each paper. The arguments in each paper represent the view of the authors.

We hope that readers find each of these papers stimulating and generative and that all sections of society can draw on the insights, arguments and ideas within the papers to create healthy, educated and connected futures for all and every child.

*Professor Susan Danby*

*Director, Centre of Excellence for the Digital Child*

*June 2022*

## EXECUTIVE SUMMARY

This paper is part of a series consisting of digital research capacity building resource-rich discussion papers, offering more technical support for the research community and allied scholarship. This series is more focused on methods and methodologies.

This paper has been checked by the sub-series editorial team to ensure it meets basic standards around clarity of expression and acceptable and inclusive language and content.

This paper describes a workshop process that aimed to explore transdisciplinary approaches to digital childhoods and produces recommendations drawn from these experiences. It emphasises the importance of recognising not only the differences between academic disciplines, and between academic and non-academic disciplines, but also the more foundational distinctions between Western and Indigenous knowledge systems. It also builds on existing work that highlights the importance of interpersonal dynamics to successful transdisciplinary engagement and draws attention to the generative possibilities of engaging with specific theorisations of transdisciplinarity.

Our aim is for these records and recommendations to benefit the Digital Child Centre in its continuing efforts to develop a transdisciplinary culture as well as other research groups and organisations that might be engaging with the challenges of fostering meaningful transdisciplinarity.

Overall, this paper emphasises the value in making space for dedicated transdisciplinary exchanges. The possibility of bringing together disciplinary expertise and approaches in new and innovative ways is part of the exciting promise of the Digital Child Centre but is also something that requires intentional cultivation. Transdisciplinary cultures need to be fostered by scaffolding people into ways of interacting and collaborating across boundaries.

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## Introduction

While the idea of ‘transdisciplinarity’ continues to hold promise as an approach to complex issues, establishing meaningful collaboration across multiple fields of practice remains a challenge. This paper describes a model of transdisciplinary collaboration explored within the [Australian Centre of Excellence for the Digital Child](#) (hereafter referred to as the Digital Child Centre) during 2022. It took the form of a series of workshops which brought together researchers from across the Centre in a joint exploration of how transdisciplinary inquiry could be fostered and what it might offer to studies of digital childhoods.

The Digital Child Centre is structured around three programs of research: Healthy Child, Educated Child, and Connected Child. These three programs articulate the Centre’s vision for positive digital childhoods and broadly map onto distinct research fields and disciplines: namely, health, education, and, in the case of Connected Child, a range of sociological and media and communications fields. As such, the structure of the Centre is inherently multi-disciplinary. Transdisciplinary engagement has been fostered across the programs in a range of ways. Many research projects within the centre include researchers from across two or three programs, although it should be noted that they are typically led from within one program with researchers from other disciplines taking on a more advisory role. Other activities (including workshops, clubs, working groups, and training seminars) have encouraged researchers from across programs to meet and interact. These efforts have prompted moments of transdisciplinary exchange and development but there remained scope for a dedicated space to discuss how we as a Centre understand transdisciplinarity, what its role is in relation to the Centre’s ambitions, and how we might sustain a more purposeful transdisciplinary culture.

This paper outlines the workshop model and develops several recommendations from our experiences. The first half of the paper describes the basic conceptualisations of transdisciplinarity that underpinned the design of the workshops, provides more information about transdisciplinary in the Digital Child Centre, and outlines the design and implementation of the workshop series. The second half outlines a series of recommendations that are drawn from the workshop experience.

Our aim is for these records and recommendations to benefit the Digital Child Centre in its continuing efforts to develop a transdisciplinary culture as well as other research groups and organisations that might be engaging with the challenges of fostering meaningful transdisciplinarity. To this end, our recommendations focus on: the importance of acknowledging Indigenous knowledge systems when working in settler colonial contexts and engaging through First Nations First processes; fostering productive interpersonal dynamics; and understanding different modes of transdisciplinarity – and the value of that to maintaining constructive differences.

## Preliminary conceptualisations of ‘transdisciplinarity’

While transdisciplinarity is commonly understood as coordinating principle through which multiple disciplines can engage with each other, it is also a distinct academic field itself with its own history of theorisations and practices. Despite this, transdisciplinarity remains challenging to define (Klein, 2013). While resistant to easy definition, we outline below the broad conceptualisation of transdisciplinarity that guided the initial development of this project. Later, in the recommendations, we elaborate upon this preliminary conceptualisation by discussing how it evolved through the process of conducting the workshops and how alternative conceptualisations might be better suited to some forms of transdisciplinary collaboration.

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Defining a ‘discipline’ can, of course, be challenging and there are often many views and positions within disciplines. For simplicity, however, our discussion focuses on the relationships between disciplines, which we take to mean distinct fields of study that are broadly unified around particular topics and theoretical, epistemological, and ontological traditions.

Attempts to define multi-, inter-, and trans- disciplinarity typically chart a progression from research approaches that involve less interaction between disciplines to ones that involve more. So, where a multidisciplinary project would involve *juxtaposing* approaches from different disciplines, an interdisciplinary project would involve *integrating* different disciplinary approaches, and a transdisciplinary project would involve some kind of further *synthesis* (Lawrence, 2010). This could mean, for example, that a multi-disciplinary project involves researchers from multiple disciplines working in their own areas, an interdisciplinary project involves the addition of methods or concepts from one discipline to a project from other discipline, and a transdisciplinary project involves different disciplines and perspectives coming together in order to define a research problem and develop a shared solution.

While distinctions between inter- and trans- disciplinarity are often murky, the key point is that transdisciplinarity aims to go beyond what are typically called ‘multidisciplinary’ approaches where elements from different disciplines are combined or put alongside each other. Instead, transdisciplinary approaches aim for ‘deeper’ engagement between disciplines, where new questions, methods, or knowledges are produced through encounters between different perspectives. Such an approach involves actively confronting disciplinary boundaries, rather than simply porting methods or concepts from one discipline into another while leaving both unexamined and unchanged. In the context of digital childhoods research, for example, a multidisciplinary perspective might note that concerns about the harms of screen time drawn from health research need to be considered alongside observations about the educational benefits of technology use drawn from education disciplines (Straker et al, 2018). In contrast, a transdisciplinary engagement might mean interrogating where these differences arise from and how we could move beyond the assumptions and preoccupations of our disciplines toward new kinds of questions and conceptualisations about the role of technology in young children’s lives.



This idea of ‘deeper’ engagement between disciplines was central to our initial conceptualisation of transdisciplinarity. As we outline below, the Digital Child Centre is inherently multidisciplinary and many exchanges were already taking place between disciplines within specific research projects. However, we sought to create a space for considering what more substantive (and challenging) engagements between disciplines would look like – engagements that went beyond including perspectives from multiple disciplines and moved toward more direct and transformative interaction between them.

A key feature of many definitions of transdisciplinarity is the idea of spanning or transcending boundaries between two different kinds of ‘disciplines’. The first is academic disciplines. In this sense, ‘transdisciplinarity’ refers to research approaches that explicitly draw from and synthesise several academic disciplines that are usually not yoked together. Stokols et al. (2010, p. 474), for instance, has described transdisciplinarity as “a process whereby team members representing different fields work together over extended periods to develop shared conceptual and methodological frameworks that not only integrate but also transcend their respective disciplinary perspectives.”

While a focus on differing academic disciplines is also common across multi- and inter- disciplinary approaches, the second type of discipline – non-academic disciplines – is particular to transdisciplinarity (Rigolot, 2020). Here, transdisciplinarity closely aligns with co-design models of practice that seek to transcend boundaries between academic research and professions and communities outside academia.<sup>1</sup> This integration of non-academic contexts orients transdisciplinary research toward addressing specific ‘real world’ problems and is a characteristic commonly attributed to a Mode 2 (Zurich) transdisciplinary typology (discussed further below). For example, Julie Klein, described transdisciplinarity as “different academic disciplines working jointly *with practitioners to solve a real-world problem*” (emphasis added, Klein et al., 2001, p. 4).

In developing our workshops, the organisers felt that both these elements – engagement between academic disciplines, and engagement with non-academic stakeholders – were important to exploring transdisciplinarity within digital childhoods research and within the Digital Child Centre. As noted by Mitchell & Moore (2018, p. 450), the field of child and youth studies is inherently transdisciplinary. This is particularly the case within the Digital Child Centre, as children and technology is a research area characterised by diverse and (at times) conflicting academic traditions. Most notably, this includes the distinctions between more broadly positivist traditions like health research, with more broadly interpretivist traditions, like media and communications research. However, this diversity also includes sub-disciplines within these traditions that likewise have differing perspectives. Media and communications, for example, has long standing debates between “media effects” approaches and approaches that focus on practices, rights, and political economies (Livingstone, 2016). As such,

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<sup>1</sup> It is worth noting that there are some disciplines in which this kind of alignment with practice is commonplace. Academics in health disciplines, for example, often retain registration to practice, develop and maintain close ties with clinical settings, and conduct research that is often co-designed with consumers and clinicians. This in itself may be a model of transdisciplinarity but could also be one element in a larger transdisciplinary project that brings together a range of such disciplines.

engagement between different disciplinary perspectives offers generative potential for progressing research within the *field* by exploring, and potentially leveraging, what is at stake in these differences.

At the same time, working in partnership with non-academic practitioners is also critical within the domain of digital childhoods research. This is a domain characterised by a broad range of stakeholders, including children, parents, educators, healthcare professionals, technology developers, policy makers, and community groups. Engaging with these stakeholders is a key value for the Digital Child Centre. Indeed, the complex nature of childhoods and the broad ambition for research in this area to positively impact children suggests that everyone may be better served by more academic research looking to work with non-academic stakeholders.

In summary, the conceptualisation of transdisciplinarity that guided the initial development of these workshops was: a) an approach moving beyond acknowledging different disciplinary perspectives to one that seeks engagement between them in order to foster a transdisciplinary culture and b) an approach that seeks to bridge between different academic disciplines and non-academic practitioners and stakeholders.

## Transdisciplinarity in practice: Project design and outcomes

Our foundational premise for this project was that fulfilling the Centre's aspirations for transdisciplinary research would require developing a culture of engagement that involves talking across different scientific protocols, modes of expression, measures, and versions of proof in order to collaborate productively and synthesise understandings into something genuinely new. We were not necessarily seeking to reconcile tensions but rather leverage extant differences toward possible new ways of questioning, understanding, and *doing* digital childhoods. We were also guided by the principle that figuring out what this kind of transdisciplinarity approach to digital childhoods might look like was probably best pursued as a praxeological rather than epistemological exercise – that is, rather than approaching the question of transdisciplinary as a purely philosophical and conceptual exercise, we instead tried to engage in it through open, collaborative exploration between researchers from different backgrounds and career levels.

### Aims

This project centred around a series of workshops that brought together researchers from across the Centre. The aim was to devise activities that would enable this group to:

- Explore the epistemological limitations and tensions within and between participants 'home disciplines' as they are used in research about digital childhoods
- Consider how transcending disciplinary perspectives may facilitate new methods, theories, and research questions

- Develop ways of conducting and translating transdisciplinary research for public consumption through collaboration with wider circles of civil society and policy stakeholders

We also sought several concrete outcomes:

- To see if the group could devise a set of research questions and/or methods for an explicitly transdisciplinary research project that the Centre could undertake the following year
- To see if the experience of the workshops produced ideas about how to continue fostering transdisciplinarity across the Centre
- And lastly, we hoped that an outcome of the workshops would partly be engagement in the process itself. What could participants learn from talking and sharing with each other about disciplinarity in the field of digital childhoods and how might this shape their research going forward?

## Participants

Engaging with issues of disciplinarity, particularly the differences and tensions between disciplines, is as much an interpersonal process as an intellectual one. With this in mind, the workshops were designed to be closed sessions with a set list of participants who had committed to attending the full workshop series. We hoped that this would facilitate the kind of trust and investment needed for such an exploratory, open-ended, and potentially challenging endeavour to succeed.

Participants were recruited from across the Centre with the explicit aim of having representation from all Centre programs (taken as proxies for disciplines, as explained above) and career levels. Invitations were also extended to two further participants who would bring specific perspectives to the group. This was an important way of supporting our intention to ‘trans’ not only traditional academic disciplines but also the boundaries between academic and non-academic stakeholders and communities. Firstly, the workshop organisers sought someone who could speak to an Australian Indigenous perspective. This was critical for several reasons. As Australia is a settler colonial state, for transdisciplinary engagement to be *truly transdisciplinary* here it must contend not only with the differences between academic disciplines but also with the more fundamental distinction between Indigenous and Western epistemologies. Also, as we discuss below, Aboriginal and Torres Strait Islander cultures, like many Indigenous cultures, hold knowledge systems that are profoundly transdisciplinary by nature and so offer not only another perspective but a perspective that models ‘doing transdisciplinarity’. Lastly, this perspective was important for keeping in view the interests of Aboriginal and Torres Strait Islander communities and children, who are key stakeholders for the Centre. At the same time, a distinction for our Indigenous kollaborator<sup>2</sup>, Dr John Davis, was and has been his grounding in a broader Indigenous Knowledge (IK)

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<sup>2</sup> ‘kollaborator’ draws on Aboriginal English and is used to distinguish IK-grounded forms of relational engagement from standard Western academic modes of collaboration (See Fletcher et al., 2023).

think tank which brings Indigenous practitioners together around projects that are seeking solutions ‘to the wicked problems of the world’ (see below; Davis & Coopes, 2022; Fletcher et.al 2023).

Secondly, the organisers sought someone who could speak to industry perspectives. This offered not only another lens through which to consider the needs and interests of non-academic stakeholders but also provided other modes of thinking about what transdisciplinary engagement and project design involves and what it needs to be successful. To this end, we were joined by Samuel Baird, a lead developer and game designer at the mobile development studio Millipede.

Lastly, the project employed Romaine Logere, a recent PhD graduate with expertise in transdisciplinary theory and practice, to help organise and facilitate the workshops. Romaine brought an understanding of the field of transdisciplinarity and thus added a further disciplinary perspective to the group through her contribution to facilitating the workshops.

A list of participants is provided in Appendix 1.

## **Process**

Four workshops were conducted between August and November 2022. An outline of workshop activities is provided in Appendix 2.

The initial workshops drew upon established inter- and transdisciplinary engagement methods that construct a common object or *relata*<sup>3</sup> (Bergmann, et al., 2012; Buller, 2009; Sehgal, 2021) through which members can reach a shared understanding of key concepts and terms. Focusing on the concept of *relata*, as opposed to the popular notion of boundary objects, was an active decision undertaken to avoid the propensity of the latter toward consensus (see Huvila, 2011). In practice this meant we collaboratively explored common themes/terms from which differing inferences and speculation could be shared and interrogated by members within the group. This was a recursive and reflective process designed to accommodate revision or revocation with the aim of supporting the participants to critically examine their theoretical approaches.

Workshops 1-3 were two-hour sessions held online through Zoom. Preliminary reading and reflective exercises were assigned prior to each workshop and were used to examine both transdisciplinarity itself (including theories and examples of transdisciplinarity from several fields) and areas of connection between members’ research interests and disciplines.

In Workshop 3, the group focused on refining the points of connection among members. This involved developing two lists: one list of “common interests” – that is, topics that could form the basis of ongoing

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<sup>3</sup> A thing or group of things through which logical relations proceed.

transdisciplinary conversations among the wider centre; and one list of “shared lines of inquiry” – that is, topics that could form the basis of transdisciplinary research projects to be pursued by the group in 2023.

These lists then formed the basis of Workshop 4.

Workshop 4 was a full-day session held face-to-face at university meeting rooms in Melbourne. The workshops were initially planned to be online but, in practice, the final workshop was held in person. This decision was made after reflecting on the limitations of online discussion, some elements of which are discussed in the recommendations below.

The two main aims for this final session were to test if a transdisciplinary project could be developed from the ‘shared lines of inquiry’ identified in the preceding workshop and to establish plans for ongoing transdisciplinary work in the centre by building on the ‘common interests’ that had been identified.

Participants were firstly asked to collectively narrow the list of possible research topics to two project ideas. Through discussion, it became apparent that most of the topics could be grouped together under one of two broad project areas: one focusing on public discourses around ‘screen time’ and other focusing on digital technology within Indigenous communities. These two project areas were then workshopped further. Taking each in turn, participants were split into small groups and asked to develop potential research approaches, questions, and methods. These suggestions were then ‘pitched’ to the wider group, and a discussion held about how the ideas could be narrowed down or integrated into a single research project.

Throughout this process, we tried to remain attentive not only to the issues that were raised about project ideas but also to the different principles and processes that were emerging as we collectively worked to make decisions and refine ideas. For example, when discussing the different pitches for the first project idea, the group integrated elements of different pitches into one overall project; in contrast, the discussion about the second project focused much more on deciding between pitches.

Ultimately, this process culminated in a “grand final” where participants were asked which of the two resulting projects they felt should be pursued and what a path toward that would look like.

The final section of the day involved a discussion about how to facilitate ongoing transdisciplinary work in the centre.

## **Outcomes**

The project developed several concrete outcomes. Some of these aligned with the initial aims of the process while others emerged from it.

Research projects: Two proposals for research projects were developed in the final workshop; one focusing on public debates around screen time and one focusing on technology use and development by Indigenous communities. Both projects are now in development.

Community of practice: Over the course of the workshops, it became clear that some of our ambitions would require much more time and were worth exploring with other people beyond the workshop. To this end, the group discussed ways of continuing to develop a transdisciplinary community of practice across the centre. Ideas included:

- A seminar series that will explore key issues within the field of digital childhoods from different disciplinary perspectives
- Repeating the workshop process annually with successive cohorts of participants. This process could continue each year across the life of the centre with the prior years' participants acting as mentors for the incoming cohort.

A working group (the *Research Infrastructure, Support, and Transdisciplinarity* portfolio) has been established in the Centre to coordinate these ongoing activities.

## Recommendations: Challenges and opportunities when cultivating transdisciplinary agility

After the workshop series, feedback was gathered by Romaine from participants and organisers. In the following section we outline some of the key recommendations drawn from that feedback and from the process of developing this working paper.

### **Broaden the concept of 'transdisciplinarity' to include both Western + Indigenous knowledge systems**

*One of our central premises was that if transdisciplinarity is about spanning boundaries, then attempts at transdisciplinarity within settler colonial contexts need to address the foundational boundary between Indigenous and Western knowledge systems. As a consequence, the workshop process raised questions about how Indigenous approaches to knowledge could be brought into conversation with Western developments around transdisciplinarity. We recommend not only that this be explored further and acknowledged within the academic field of transdisciplinarity research but also that projects which seek to foster transdisciplinarity within settler colonial contexts consider this kind of boundary spanning as a necessary part of any truly transdisciplinary project.*

The canonical Western academic literature on transdisciplinary currently has little to say about Indigenous knowledge systems despite the clear tendency of such systems toward a profound form of transdisciplinary in which scientific knowledge, cosmology, language, place, art, and social order are integrated into holistic understandings of reality. There are important exceptions to this: some scholars have noted the parallels between Indigenous knowledge systems and recent theorisations of transdisciplinarity and called for greater engagement with Indigenous epistemologies (Cole, 2017; Mitchell & Moore, 2018). Notably, Mitchell and Moore (2018) argue specifically for the importance of engaging with

Indigenous knowledge systems within the transdisciplinary field of child and youth studies. Yet, overall, these remain an under-acknowledged and under-explored relationships.

In our case, our Indigenous kollaborator, John Davis, is a contributor to the Indigenous Knowledge Systems Lab (IKSL), which has explored Indigenous systems approaches in its delivery of research projects focusing on ‘wicked problems’ (IKSL, n.d.; Davis & Coopes, 2022). A key driving factor in IKSL’s research is the setting of governance structures amongst the age-old system of wanjaus ngima warmgas as part of the Bunya Bunya governance model<sup>4</sup> (Bunya Mountains, 2010; Fletcher et.al 2023) and applying these approaches through a theoretical lens of ‘emergence’ (Davis & Coopes, 2022; Fletcher et.al 2023). Within this context, our (collective) hope is to develop a hybridity of process and praxis as the Digital Child Centre expands its relationships with IKSL and IKSL-informed methodologies.

We raise this not with an extractive mindset about how Western academic research would benefit from this approach. Indeed, we caution against the adoption of Indigenous concepts or methods as ‘tools’ without proper engagement with Indigenous researchers, communities, and perspectives. Rather, we raise this as an issue of justice and acknowledgement, and in recognition that the kinds of complex problems that transdisciplinarity claims to tackle might in fact be best served by learning from the knowledge systems that sustained successful civilisations over many tens of thousands of years (IKSL, n.d; Sveiby & Skuthorpe, 2006; Yunkaporta, 2019).

It is also critical to note that engaging with Indigenous knowledge systems means engaging with Indigenous people, and that this raises the need to ensure that transdisciplinary spaces are welcoming of and respectful to Indigenous participants. As we note in the following section, the importance of safe spaces was raised by several junior participants, but it is also a factor here in terms of ensuring cultural safety. For example, it’s important to recognise that elements of Western scientific knowledge have been tools of colonisation and are thus implicated in the attempted erasure of Indigenous cultures and peoples. This means that in some cases and for some Indigenous people, discussions about epistemology are not just a matter of intellectual debate but require acknowledging the harms that have occurred to Indigenous peoples, cultures, and lands through Western doctrines of objectivity and absolutism. In this context, we might describe the challenge of creating a safe space as one of developing ‘third cultural spaces’ that productively bridge Western and Indigenous knowledge systems (Stronger Smarter Institute, 2022). If groups are looking to build specific transdisciplinary research projects with Indigenous partners, it then becomes a case of looking to processes for establishing meaningful equity partnerships (Davis, forthcoming).

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<sup>4</sup> This is a model of sharing and exchange grounded in ties to place and space, specifically traditions of the western Bunyas. (In Barrungam, wanjaus is ‘exchanges’, ngima is to ‘action’ or am ‘doing’ and warmga is a “place” on the near western sides of the Bunya Mountains).

**Set explicit terms of engagement that acknowledge power dynamics and encourage emergent ideas**

*The workshop participants were intentionally chosen to represent diverse perspectives and a range of career levels. This brought many benefits but also presented challenges, particularly for junior participants. We recommend that similar projects intentionally seek diverse participants but also that care is taken to acknowledge and explicitly encourage participation from those with less experience openly experimenting with ideas. Setting terms of engagement and allowing time for trust and rapport to develop are crucial.*

Many participants valued exposure to a diverse set of ideas and perspectives and felt that the broad range of representation from across career levels was an advantageous factor to the group. Some members of the group found that exposure to other disciplinary standpoints helped them interrogate their own positions and improve on their own research strengths. A number of junior academics felt that their exposure to more experienced participants' thinking was valuable not only on a personal level, but in ways that could assist them in thinking about their own research and how it might be strategically framed to support the Centre's aims. Similarly, exposure to a diverse range of perspectives and opinions were commonly cited as a beneficial factor in improving research strength.

At the same time, this diversity presented challenges. Some of the junior participants reported feeling hesitant about sharing their contributions with the more senior academics. One noted that this was partly due to a sense of there being "high[er] stakes" at play when discussing *emergent* thoughts with an unfamiliar group of people. They noted that the focus on transdisciplinarity required them to think in new and unfamiliar ways, and that this meant many of their contributions were necessarily tentative and experimental. This was a mode of thinking that they felt less confident about sharing among more senior colleagues.

Some of the junior participants also felt this was compounded by the online environment. As noted, three of our four workshops were conducted on Zoom and while many within our group enjoyed the advantages of meeting without the need for travel, it was perceived by some of the more junior participants as a comparatively formal environment that made it harder to share off-the-cuff or tentative contributions and to develop trust and rapport. This contrasts with the more senior participants who, for the most part, did not seem to share these concerns.

These observations speak to the broader challenge of creating safe spaces that adopt a "person-centred" approach to transdisciplinary innovation. Some of the junior participants offered practical suggestions for fostering a more supportive environment. These included conducting the first workshop in person so that participants can develop rapport before moving online and providing more chances for participants to 'test out' ideas by sharing them with one or two others before speaking with the group. They also felt that setting out more explicit terms of engagement would be helpful. This could involve directly noting that people hold different levels of experience and status, that contributions from junior colleagues are specifically valued and welcomed, and that transdisciplinary engagement necessarily involves ideas that are experimental and uncertain and so even the most tentative contributions are encouraged.



These reflections emphasise that transdisciplinarity is as much a social process as it is an intellectual one and that there are no shortcuts for establishing these relationships, even in comparatively informal and low stakes context of workshopping. People may come with the best of intentions but this is only a starting point for the rapport and trust that needs to be built before more meaningful work can be done. This means that cultivating a supportive and equipotent environment is important not only in relation to encouraging participation but to the generative potential of the practice itself. In our case, in future we would look to draw on our kollaborator's expertise in yarning circle processes. These involve practices drawn from Aboriginal and Torres Strait Islander IK and that support inclusive generative discussion through deep listening and mitigating relational hierarchies (Davis & Coopes, 2022; Stronger Smarter Institute Limited, 2020, pp. 18-19).

These observations touch upon some of the wider power dynamics at work in transdisciplinary interactions (Fritz & Binder, 2020; Fritz & Meinherz, 2020; Kareem, et al., 2022; Logere, 2010). Specifically, in this instance, amongst those who are accustomed to status as knowledge authorities and “being the big voice in the room” (Stevenson, interview, 2022). While a detailed examination of transdisciplinary power relations is outside the scope of this paper, it is a factor that should be taken into consideration because “what is perceived to be worth researching or developing relates to whose values count and where the power to realise them is located ... thus shaping which futures are considered desirable or even ... plausible” (Fritz & Binder, 2020, 17). Further, the identified need for safe, collegial spaces in which power relations are openly acknowledged is supported by research on collaborative learning process which shows that the “constitutive features of innovation – such as creativity, idea sharing, idea realisation, learning, and collaboration – depend on high levels of trust within a stakeholder community” (Dovey, 2009, 323) and indicates a need for building cohesive and purposeful communities of practice.

### **Articulate the differing traditions of transdisciplinarity and consider the benefit of models that sustain productive differences**

*There are a range of different theories/frameworks for understanding what transdisciplinarity is, how it operates, and to what ends. We recommend exploring these different traditions and considering which may best fit with the aims and intentions of different projects. In the case of our workshops, a Nicolescuian<sup>5</sup> understanding emerged as a particularly relevant framework. It allows for sustaining different perspectives, as opposed to approaches that seek integration and synthesis – a value that became particularly important as the workshops sought to consider how Western and Indigenous approaches to transdisciplinarity might be brought into relation. Nicolescuian transdisciplinarity provides a promising framework for other work across the Centre, and for projects elsewhere that might have similar aims to the workshops described here.*

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<sup>5</sup> This term describes an approach to transdisciplinarity articulated by Dr. Basarab Nicolescu, a scientist based in France. See the following page for a more detailed description.

As we noted above, the conceptualisation of transdisciplinarity that underpinned the initial development of the workshops was focused around ideas of synthesising, integrating, and transcending disciplines. These concepts functioned as a heuristic for articulating something that was ‘not multidisciplinary’ – that is, something that involved more than just putting perspectives from different disciplines alongside each other without meaningful engagement between them.

As the workshops progressed, and particularly through Romaine’s contributions, the workshop organisers and participants became aware of a much more expansive and contested conceptual landscape around transdisciplinary engagement, particularly recent evolutions in transdisciplinary theory and practice that emphasise difference and uncertainty, as opposed to the processes of ‘merging’ or ‘resolving’ connoted by our original conceptualisation.

This process of conceptual evolution began with discussions about different modes of transdisciplinary practice. Through these, the group identified two approaches to transdisciplinarity – Zurich/Mode 2 and Nicolescuian transdisciplinarity – as potentially the most relevant to the group’s needs. In the discussion below, Romaine, our participant with expertise in Western traditions of transdisciplinarity, outlines each of these and explains how a Nicolescuian approach maps onto our workshop process and may be suited to similar endeavours within and beyond the Centre.

**Zurich or ‘Mode 2’ transdisciplinarity** has its origins in a congress held in Zurich in March 2000, where much of the work drew on Gibbons et al.’s (1994) ‘Mode 2’ approach to knowledge production and transdisciplinarity. In this approach, the prefix ‘trans’ in transdisciplinarity alludes to the concept of transgression. Specifically, “knowledge ... [that] transgresses disciplinary and institutional boundaries” (Gibbons and Nowotny, 2001, 67). This Zurich/Mode 2 approach centres on problem-focused collaborative work in which knowledge is developed in response to a specific issue or problem. It employs flexible problem-solving frameworks and systems of knowledge distribution that do not necessarily involve conventional academic channels. Instead, the dissemination of knowledge “occurs primarily as the original practitioners move to new problem contexts rather than through reporting results in professional journals or at conferences” (Gibbons et al., 1994, 5). Zurich/Mode 2 transdisciplinarity is oriented toward integration and consensus, and is commonly used by government, community groups, and education sectors to produce practical solutions to real-world problems.

However, within the context of our workshops, a Zurich/Mode 2 approach presented several challenges. These were primarily to do with its emphasis on ‘integration’ as the most desirable outcome and its core assumption that the “science system is the primary knowledge system in society” (McGregor, 2015, para. 35). As other scholars have noted, trying to achieve integration and synthesis can ultimately result in giving preference to one ontology over another, risking reductivism (de Freitas et al., 1994; Miller, 1982; Ramadier, 2004). As the aims of the workshop were to try and open up new ways of interrogating digital childhoods, and to engage across both Indigenous and Western knowledge systems, a drive toward consensus and synthesis cut against

the groups emerging ethical and conceptual ambitions. These ambitions map more easily onto a Nicolescuian understanding of transdisciplinarity.

**Nicolescuian transdisciplinarity** was initially articulated by Basarab Nicolescu in the 1980s and then developed through a number of international congresses. In this approach, the prefix ‘trans’ refers to ‘transcendence’. It denotes a move away from the boundaries of (Western) disciplinary knowledge toward a recognition of other systems of knowing. Specifically, it recognises contributions to knowledge provided by different understandings that are “governed by different types of logic [and take into account] ... all existing data [as] the best defence against possible distortions” (de Freitas et al., 1994, para. 10 & 22). In so doing, the Nicolescuian approach allows for two moves that aided the intended aims for our project. The first of these is its provision for “ubiquitous disparate and conflicting values [that] must be heard and reconciled leading to the formation of transdisciplinary values for the issue at hand” (McGregor, 2018, 189) and the second, a conceptualisation of knowledge as “complex, emergent, [and] cross-fertilized” (McGregor, 2015, para. 32).

These were fitting provisions within the context of a project that sought out meaningful engagement between disparate academic perspectives, non-academic viewpoints and between Indigenous and Western epistemologies, and that was geared more toward exploration than problem solving. In this context, it became evident that consensus and/or integration may not be an achievable goal, or even a desirable one, particularly as adopting an approach underpinned by notions of subsumption could compromise the identify and contributions made by distinct systems of knowledge (Brenner, 2005). With this in mind, the workshops were increasingly approached with an inclusive logic through which different perspectives were “understood as being in dynamic relationship” (Brenner, 2005, 3) rather than as things to be merged or synthesised.

This shift toward a more Nicolescuian approach had implications for how we approached the question of a transdisciplinary approach to digital childhoods research. The aim for the workshops was always to go beyond trying to reconcile the tension between, for example, the ills of screen time and the importance of digital literacy; rather, we wanted to ask whether there might be ways to “deepen understandings and develop solutions for wicked problems by sense-making ways to gather, with embassy, and create new ways of yarning and doing” (Davis & Coopes, 2022, 102). Thus, we moved away from the concept of ‘synthesis’ and instead talked in terms of developing ‘common problems’ and ‘shared lines of enquiry’ that would allow the group to recognise and leverage differences while collectively advancing toward compatible goals.

Finally, this suggestion around the value of a Nicolescuian approach should be held in relation to (or tension with) our first two points – that is, firstly about the need for broadening academic conceptualisations of transdisciplinarity beyond Western traditions and secondly about the need to be intentional about power-relating and fostering emergent processes. In different contexts, these considerations may relate in ways that produce different outcomes. In this regard, we note with interest Anthony Cole’s observation that Nicolescuian transdisciplinarity has resonances and similarities to Māori

knowledge systems and that this is one example of the “urgent need for transdisciplinary scholars to engage in emerging decolonising literatures” (Cole, 2017, p.146). We also point back to our earlier reference to ‘third spaces’ and the models developed by IK practitioners here in Australia for working across and between Western and Indigenous contexts and knowledges (Stronger Smarter Institute, 2022). These are among the kinds of possibilities we hope this working paper has gestured towards.

## Conclusion

This paper has described a workshop process undertaken to explore transdisciplinary approaches to digital childhoods and produced recommendations drawn from these experiences. It emphasises the importance of recognising not only the differences between academic disciplines, and between academic and non-academic disciplines, but also the more foundational distinctions between Western and Indigenous knowledge systems. It also builds on existing work that has highlighted the importance of interpersonal dynamics to successful transdisciplinary engagement and draws attention to the generative possibilities of engaging with specific theorisations of transdisciplinarity.

Overall, it emphasises the value in making space for dedicated transdisciplinary exchanges. The possibility of bringing together disciplinary expertise and approaches in new and innovative ways is part of the exciting promise of the Digital Child Centre but is also something that requires intentional cultivation. Transdisciplinary cultures need to be fostered by scaffolding people into ways of interacting and collaborating across boundaries. It will be important to continue creating dedicated spaces for exploring what this looks like and what it offers to the Centre. Continuing to successfully build this kind of culture will enrich not only the research already underway but also aid in the process of finding new questions, approaches, theories, and methods that can contribute to better understandings of digital childhoods.

## Appendix 1: Workshop participants

Name	Role and Affiliation	Centre Program	Role
Romaine Logere	Research Fellow Deakin University and RMIT	N/A	Facilitator
Kate Mannell	Research Fellow Deakin University	Connected Child	Facilitator and participant
Julian Sefton-Green	Professor Deakin University	Connected Child	Facilitator and participant
Leon Straker	Distinguished Professor Curtin University	Healthy Child	Participant
Janelle MacKenzie	Research Fellow Queensland University of Technology	Healthy Child	Participant
Natalie Day	PhD candidate University of Wollongong	Educated Child	Participant
Pauline Roberts	Senior Lecturer Edith Cowan University	Educated Child	Participant
Lisa Kervin	Professor University of Wollongong	Educated Child	Participant
Giovanna Mascheroni	Associate Professor Catholic University of the Sacred Heart Milan	Connected Child	Participant
Sue Bennett	Senior Professor University of Wollongong	Connected Child	Participant
Philippa Amery	PhD candidate Queensland University of Technology	Educated Child / Healthy Child	Participant
John Davis	Senior Research Fellow Indigenous Knowledge Systems Lab (NIKERI) and Centre for the Digital Child Deakin University	Connected Child / Educated Child	Participant
Samuel Baird	Lead Developer Millipede	N/A	Participant

## Appendix 2: Workshop summary

	Readings	Activities	Outcome
<b>Workshop 1: Introducing transdisciplinary practice</b>	<p>Pennington, D. D., Simpson, G. L., McConnell, M. S., Fair, J. M., &amp; Baker, R. J. (2013). Transdisciplinary research, transformative learning, and transformative science. <i>BioScience</i>, 63(7), 564-573.</p> <p>Schauppenlehner-Kloyber, E., &amp; Penker, M. (2015). Managing group processes in transdisciplinary future studies: How to facilitate social learning and capacity building for self-organised action towards sustainable urban development?. <i>Futures</i>, 65, 57-71.</p>	<p>Discussion of readings</p> <p>Negotiating group process and disruption management within transdisciplinary discussion.</p> <p>Discussion activity: What do we mean by a transdisciplinary approach to digital childhoods?</p>	<p>Identify forms of transdisciplinary exchange that best support the group's activity.</p>
<b>Workshop 2: Rethinking methodology</b>	<p>Outline of transdisciplinary models prepared by Romaine</p>	<p>Presentation about different models of transdisciplinarity</p> <p>Discussion of readings</p> <p>Discussion activity:</p> <ul style="list-style-type: none"> <li>- What are two or three main problems that your field has constructed in relation to children and technology?</li> <li>- What assumptions, concepts, theories or methods frame those problems?</li> <li>- How have those assumptions, concepts, theories or methods changed in your field over time?</li> </ul>	<p>Identify readings for the next workshop related to the discussion activity</p>
<b>Workshop 3: Identifying common</b>	<p>Cumming, T., &amp; Wong, S. (2015). Changing and sustaining transdisciplinary practice through research partnerships.</p>	<p>Discussion of readings</p> <p>Discussion activity:</p>	<p>Lists of commonalities: parallel interests and common problems.</p>

<p><b>problems and parallel interests</b></p>	<p>In <i>Transdisciplinary professional learning and practice</i> (pp. 25-39). Springer, Cham.</p> <p>Straker, L., Zabatiero, J., Danby, S., Thorpe, K., &amp; Edwards, S. (2018). Conflicting guidelines on young children's screen time and use of digital technology create policy and practice dilemmas. <i>The Journal of pediatrics</i>, 202, 300-303.</p>	<ul style="list-style-type: none"> <li>- Identifying <u>Parallel interests</u> i.e. interests, concepts, and methodological priorities held in common. These are things that could form the basis for seminar series, discussion groups etc</li> <li>- Identifying <u>Common problems</u> i.e. 'real world' problems or issues held in common and that would benefit from a transdisciplinary approach. These are things that could form that basis of research projects.</li> </ul>	<p>Determining aims for the final workshop</p>
<p><b>Workshop 4: Workshopping project ideas</b></p>	<p>Develop a transdisciplinary project and plans for the Centre</p>	<p>Sequence of workshop activities that progressed through:</p> <ol style="list-style-type: none"> <li>a) brainstorming project ideas</li> <li>b) selecting / combining ideas to form two key project possibilities</li> <li>c) workshopping research designs for both potential projects</li> <li>d) determining priority project for development in Q1 2023.</li> </ol> <p>Group discussion of other needs and possibilities for supporting transdisciplinarity within the Centre.</p>	<p>Two proposals for future research projects and the identification of a need for a community of practice, including a list of suggested activities to sustain it.</p>

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## ABOUT THE AUTHORS

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Dr Romaine Logere is a design researcher whose work analyses transdisciplinary practice. Her research is particularly concerned with the role of difference and experiential phenomena in the production of knowledge. She is currently working with RMIT Europe and the European Institute of Innovation and Technology (EIT) Urban Mobility initiative assisting the development of online course material, with a specific focus on engagement and assessment design.

### **Dr Kate Mannell**

Kate is a Research Fellow at Deakin University in the ARC Centre of Excellence for the Digital Child. Her research focuses on the design, governance, and use of digital technologies and their role in the everyday lives of families and children. She has particular interests in data privacy, digital disconnection, and technology discourse. Kate has recently published research in *Cultural Studies*, *Social Media + Society*, *M/C Journal* and the *Journal of Computer Mediated Communication*.

### **Dr John Davis**

Dr John Davis is a proud Murri Ambae man. He is a Traditional Owner of the western sides of Bunya Bunya Mountains, Country we call Boobagarrn Ngumminge. “My people are Cobble Cobble kinnected to Warra and Dalby. We have links directly to the Barunggam and Wakka Wakka people”. John is passionate about our people, our languages and culture and working and moving our ways forward as best practice in education and community development. John is currently a Senior Research Fellow at the [Indigenous Knowledge Systems Lab](#) (Deakin University), an activist, public-facing think-tank rooted in research that leads with the insight that Indigenous Knowledge carries the patterns, systems, methods and protocols to make regenerative models of production, trade, economics, governance and technology function sustainably at scale.

John was former CEO of the [Stronger Smarter Institute](#), an organisation that works with educators to improve the educational outcomes for Aboriginal and Torres Strait Islander children. He is a regular media commentator, including regular appearances as a panellist on ABC’s *The Drum*.

### **Dr Pauline Roberts**

Pauline began her professional career as a teacher and director of early childhood services in NSW. As she developed experience and confidence in this area, she began teaching students at TAFE in Western Sydney. Through the completion of her Doctoral degree, Pauline took on coordination and teaching of units across early childhood and primary courses in a range of content areas while also working with academics across several research studies. Pauline’s Doctoral Research (EdD) focused on the development of reflection through an ePortfolio platform, which led to an investigation of blended learning environments to facilitate ongoing learning and demonstration of competencies towards registration and employment. Since moving into leadership roles and becoming a Senior Lecturer, Pauline has continued

to focus on reflection, ePortfolios and technology but also now teaches in the Leadership area with a focus on advocacy and workforce issues impacting on the early years.

### **Phillipa Amery**

Phillipa is an early childhood teacher currently studying her PhD at QUT and the Australian Research Council Centre of Excellence for the Digital Child. Philippa's PhD seeks to understand first-time mothers' everyday digital practices, with a particular focus on mother-infant interactions when mobile devices (e.g., smart phones, tablets) are present. Data consist of ethnographic observational data methods, including naturalistic video data of mother-infant interaction, and mothers' accounts. A feminist ethnomethodological lens that draws on the tools of Conversation Analysis, Multi-Modal Analysis and Membership Categorization Analysis, will analyse the ways mothers and infants connect and communicate when digital devices are used. How mothers' account for their everyday digital practices will also be analysed. A central aim of Philippa's study is to understand what constitutes first-time mothers' everyday digital practices to provide more nuanced accounts of mother-infant interaction and technology use. Furthermore, Philippa hopes her PhD will contribute empirical knowledge that assists in starting strengths bases conversations that consider the participatory possibilities of devices and ameliorate some of the shame, guilt and panic that often accompanies mothers' digital technology use.

### **Sue Bennett**

Over the past 30 years, Sue Bennett has worked as a writer, educational designer, higher education teacher and university academic. Her research explores how individuals experience digital technologies across their lives from the early years through to adulthood. She draws on psychological and sociological theory, and quantitative and qualitative methodologies to develop a more holistic understanding of how we live and learn with technology, with the aim of advancing research, practice and policy. Sue has extensive governance experience, and a strong track record in research capacity building and successful industry and community partnerships. She is currently Senior Professor and Executive Dean of the Faculty of the Arts, Social Sciences and Humanities at the University of Wollongong, and Co-lead of the Connected Child program and Deputy Director of the ARC Centre of Excellence for The Digital Child.

### **Natalie Day**

Natalie is a Research Fellow at Early Start, University of Wollongong, where her research focus is early self-regulation development and parent-child play. Natalie completed her M.Ed at Cambridge University in 2016, where she also contributed to research on the development of playful pedagogies at Cambridge's PEDAL Centre (Play in Education, Development, & Learning). Natalie continues to work on a variety of projects in the field of education, including adult-child interactions in digital play, playful parenting in international contexts, and intergenerational play. Natalie is a PEDAL affiliate, member of the NSW Institute of Educational Research, and member of the Australian Research Council Centre of Excellence for the Digital Child.

### **Lisa Kervin**

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Lisa has researched her own teaching and has collaborative research partnerships with industry, educators and learners across a range of settings. In 2016 she received the Australian Literacy Educator’s Association medal for services to literacy locally, nationally and internationally and Australia Day 2022 was awarded an Innovation Achievement Award.

### **Giovanna Mascheroni**

Giovanna Mascheroni PhD in Sociology, is a sociologist of digital media, and Associate Professor in the Department of Communication, Università Cattolica del Sacro Cuore. She is currently leading WP6 in the H2020 project ySKILLS, and DataChildFutures, a national project investigating the data practices of Italian families with children aged 0- to 8-year-olds. Her work focuses on the social shaping and the social consequences of digital media, datafication and AI for children and young people. She has published extensively in international journals (including *New Media & Society*, *Journal of Children and Media*, *Social Media & Society*, and *Information, Communication & Society*) and edited volumes. Her latest book is *Datafied childhoods: Data practices and imaginaries in children’s lives*, co-authored with Andra Siibak.

### **Janelle MacKenzie**

Dr Janelle MacKenzie completed her PhD at Queensland University of Technology (QUT) investigating maternal sleepiness and the impacts of sleepiness on driving. In particular, she focused on the assessment of maternal sleep and infant sleep, as well as the psychological and social factors that contribute to sleepiness in the postpartum period. Upon completion of her PhD, Janelle worked in the QUT School of Design investigating how park design influences the physical activity and social engagement of park users, particularly children and their caregivers.

As a Research Fellow, Janelle contributes to the Healthy Child and Connected Child programs within the ARC CoE for the Digital Child by investigating children’s experiences when playing videogames through exploring psychophysiological impacts and links with wellbeing. Janelle also contributes to the Healthy Child program by examining the associations between children’s digital technology use and their sleep. She intends to contribute to the understanding of how children’s digital technology use fits into the broader context of how children spend their time. Janelle’s vision for the future is that children and their caregivers feel empowered to make informed decisions about children’s digital technology use within the whole context of the child’s life.

### **Julian Sefton-Green**

Julian Sefton-Green is Professor of New Media Education at Deakin University. He has worked as an independent scholar and has held positions at the Department of Media & Communication, London School of Economics & Political Science (where he is currently a visiting professor) and at the University of Oslo working on projects exploring learning and learner identity across formal and informal domains. He has been an Honorary Professor of Education at the University of Nottingham, UK and the Institute of Education, Hong Kong, and a Visiting Professor at [The Playful Learning Centre](#), University of Helsinki.

He has been the Head of Media Arts and Education at WAC Arts - a centre for informal training and education - where he directed a range of digital media activities for young people and co-ordinated training for media artists and teachers. Prior to that he worked as Media Studies teacher in an inner-city comprehensive London; and in higher education teaching undergraduate and postgraduate courses, leading teacher training degrees in media education.

He has researched and written widely on many aspects of media education, new technologies, creativity, digital cultures and informal learning and has authored, co-authored or edited 20 books. He is currently a key lead researcher in the [Australian Research Council funded Centre of Excellence studying Digital Childhoods](#) and co-director of a 3 year study, funded by The Wallace Foundation, [Tracing the Enduring effects of Community Arts participation](#). He has spoken at over 50 conferences in around 20 different countries <[www.julianseftongreen.net](http://www.julianseftongreen.net)>

### **Leon Straker**

Leon Straker is John Curtin Distinguished Professor in the School of Allied Health at Curtin University, Perth, Australia. With degrees in Physiotherapy, Ergonomics and Occupational Health his research interests include the impact of information technology on the lives of adults and children. In particular he has a focus on physical activity and sedentary behaviours and physical health outcomes.



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