



Contemporary Design  
Education in Australia



# Contemporary Design Education in Australia

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Creating Transdisciplinary Futures

EDITED BY

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*This book is dedicated to all our students who have participated in the learning activities described across the book, and to all our colleagues, friends, and families who have supported us.*



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# Foreword

*Dr Brandon Gien*

Good design has the power to transform a problem into an innovative solution that will have a positive impact on our lives and our world. Design is a universal process that can be applied to transforming complex systems and services, processes, policies, legislation, digital technologies, and products, as well as the places we live, work, play, and learn. Good design applied in this way is good for business and helps drive economic competitiveness.

At its core, design is a creative problem-solving tool. Design helps us to better understand problems at a deeper, user-centred level and provides a framework to ensure the ‘right problem’ is being solved and then ‘solving the problem right’. A true design mindset embraces multidisciplinary and diversity to align shared goals, unlock deep insights, and deliver memorable, meaningful outcomes that have an impact.

Today, to be a successful business through design is no longer only about ensuring a product or service is functional, aesthetically pleasing or designed for efficiency and productivity. Businesses need to consider design from a much broader context: the digital and non-digital user experience, how they capture value from new services, the impact of Industry 4.0 on their offering and supply chains, circular economy implications, artificial intelligence, and global changes in our climate system – all of which will inform their current and future business models.

In a hyper-connected digital era, there is no doubt the profession of design is also constantly evolving and expanding. Now more than ever, design is being leveraged as a core strategy to give businesses a competitive advantage, with a growing list of top-tier firms embedding design capability as a tool for differentiation and innovation, and a catalyst for change and transformation. Designers are now designing business models, social systems, services, experiences, and innovation agendas. Beyond business, design thinking is being deployed across public and private sectors to help address bigger and more systemic global challenges, including design for circularity and design for social impact.

Solving social and environmental problems is a multidisciplinary exercise that challenges designers, architects, engineers, scientists, entrepreneurs, and our

government and business leaders to think more holistically about our world. With existing technologies and applied design methodologies, we could significantly reduce our carbon footprint and move towards a more sustainable and balanced world.

Increasingly, the design sector is being forced to reflect on what skills designers are missing. With ever-evolving shifts in the globalisation of education, traditional design education is being challenged to keep pace and prepare emerging designers for the real world. While some academic models succeed in equipping our future design partitioners with the skills and attributes needed to succeed in their careers, the current pace of technological advancement is creating a growing gap in the skills they are taught and the skills they actually need.

With all this change, one thing is abundantly clear, the role and importance of delivering quality design education are now more important than ever. We need to rethink and redesign our approach to design education so that it embraces transdisciplinary, inclusive, and collaborative design practices to prepare students for a non-linear design career path.

As Don Norman, director of The Design Lab at the University of California in San Diego, has said, ‘Design is not about interacting with a computer; it’s about interacting with the world. To deal with today’s large, complex problems, design education needs to change to include multiple disciplines, technology, art, the social sciences, politics, and business’.<sup>1</sup>

As any seasoned designer will attest to, ‘interacting with the world’ and collaborating with other professions are critical components of any design project and that’s where this book comes in. It explores a number of innovative approaches to design education through interdisciplinary and transdisciplinary learning experiences. The authors provide several team-based teaching experiences that include different disciplines outside of design to create transcendent experiences for students.

The book draws on the experience of academics and design practitioners from Australia and internationally, and reviews transdisciplinary practices in design education as a basis for understanding global needs and trends in higher education. Australia’s highly internationalised design education system creates an interesting context for viewing the application of the transdisciplinary methods and processes proposed.

Diversity in design education and practice is now more important than ever as designers embrace inclusivity and co-design practices, so it is heartening to see the authors explore the interrelations between First Nations perspectives and transdisciplinarity practices in design education. Including First Nations voices in design teaching, curricula and research are essential, and the authors explore ways

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to work together respectfully with First Nations partners to embed principles of respect, inclusivity, and cultural competence.

There is no doubt we are experiencing a paradigm shift in the approach to teaching design in higher education – the timing of this book couldn't be better. It is clear that if the future of design education is to flourish, it must embrace elements from multiple disciplines (multidisciplinarity) and blend these interactions to create meaningful cooperation (interdisciplinarity) to provide impactful outcomes to complex problems and challenges (transdisciplinarity).

*Contemporary Design Education in Australia: Creating Transdisciplinary Futures* has the potential to inform practices within our design education system for the better so that it will have a positive impact not only on our future generation of designers but also on the important roles they will play in their careers as design changemakers.

If ever there was a time to use all the tools in the design box, now is that time. As our world grapples with the ongoing impact of a pandemic, our ability to adapt and generate effective design-led solutions will not only determine our survival but shape the future of business, society and our fragile environment.

Dr Brandon Gien CEO  
Good Design Australia  
August 2021

## NOTE

1. Akawi, Yazan (2017), 'The future of design education is ... no design education: The modern designer has a breadth of experiences not degrees', Inc.com, 22 August, <https://www.inc.com/yazin-akkawi/the-future-of-design-education-is-no-design-educat.html>. Accessed 27 August 2021.



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While creating this book, we have navigated numerous national and global disasters, including Australia's Black Summer bushfires (2019–20), the global Covid-19 pandemic (2020 onwards) and, most recently, the catastrophic eastern Australian floods (2022). All of these events have had a direct impact on both our local community and the global communities with whom we have worked. We recognise the impact that these events have had on people, livelihoods, animals and their habitats, in addition to the environment. Applying a transdisciplinary approach to design learning is critically important if we aspire to challenge and equip our students to respond to these events.





# Introduction: Design and the Changing Educational Landscape

*Lisa Scharoun, Deanna Meth, Renata Lemos Morais, and  
Philip Crowther*

In modern society, design is everywhere and everything is designed. It is the driving concept behind a process of transformation and representations – giving our material culture its value, meaning, and balance. Design can be an agent for change, creating a space for positive and sustainable transformations, informing purpose and meaning by connecting others in an iterative process. However, it can be equally destructive, creating excessive waste, appropriating symbols, and devaluing embedded cultural meaning. According to Escobar (2018: 1), ‘[M]uch of what goes on under the guise of design at present involves intensive resource use and vast material destruction; design is central to the structures of unsustainability that hold in place the contemporary, so-called modern world.’ As educators, our role involves shaping a vision of the future in collaboration with our colleagues, students, and industry. Our students, who are primarily young people, will ultimately advance our ideas and propose new and better processes for the future. As explained by Woodman (2011: 111): ‘[T]hinking about and shaping the future and enjoying, and coping in, the present are not individual pursuits but shaped collectively with significant others.’ In this sense, we know that a future vision cannot be undertaken without a transdisciplinary approach.

This book outlines a number of approaches to teaching higher education students to learn to design with uncertainty and to take productive risks while working with their ideas in creative ways, through transdisciplinary, multidisciplinary, cross-disciplinary, and interdisciplinary learning experiences. Increasing educational globalisation, diversity, internationalisation, and mobility have all contributed to a paradigm shift in the approach to teaching in higher education. In this current climate, students need to realise that their career paths may not be clear-cut and, in order to be competent in an increasingly complex world, they

may need to work beyond disciplinary boundaries. The Four Cs of 21st Century Learning – critical thinking, communication, collaboration, and creativity – were developed by the National Education Association in the United States as a means to address the rapidly changing nature of the workforce (NEA 2019). Educators are rethinking traditional disciplinary teaching practices to include more transdisciplinary and adaptive practices. Adaptive or additive processes allow the adaptation of a curriculum through adding content, perspectives, concepts, and themes without changing the basic structure, characteristics, and purpose of that curriculum (Fernandez and Jenkins 1999: 2). According to Burnett (2005), ‘various disciplines [...] over the course of the 20th century became increasingly sub-divided and as they grow more specialized, they cease to see or even envisage the potential connections they may have to other disciplines’. Traditional disciplinary silos do little to advance the competencies needed in the contemporary design field. Leblanc argues that by ‘compartmentalizing knowledge, disciplines can lose the ability to contextualize or to position the knowledge in its natural context’ (2009: 107). While Blessinger and Carfora explain, that ‘educators are challenged to work within the new realities of modern life and within the multi-purpose role of education (i.e., political, economic, social, and personal)’ (2015: 5). Further, Blessinger and Carfora remind us that ‘educators today must serve multiple constituencies and purposes and learn how to adapt to the contemporary educational environment’ (2009: 107). Transdisciplinary approaches to design education are a means to bridge this gap and prepare students for a non-linear career path.

Design theory and practice across the fields of architecture, landscape architecture, visual communications, fashion, interior design, industrial design, interaction, and user-experience design, together with diverse areas such as health, planning, engineering, and culinary arts, can enable ways to address issues that are not confined merely to a specific discipline, but to society more broadly. This book, in its exploration of a range of transdisciplinary, inter-, multi- and cross-disciplinary learning examples, contextualises the importance of group collaboration and the need for input and support by a range of people, with diverse skills, to solve contemporary challenges.

With its capacity to transcend individual disciplines and create a unity of intellectual frameworks, transdisciplinary learning can be an effective way to support and embed the skills and knowledge needed to solve a range of complex problems. The higher education sector needs to respond transformatively to the impacts of a changing society, including fluctuating market demands, economic variations, uncertainties, and globalisation. Students and educators alike need to be fluid and adaptive in their response to these uncertainties and to broaden their knowledge to a much wider disciplinary lens than applied in traditional design programs, and a deeper understanding of the complexities within which design practice is

situated. As such, this book presents learning examples that highlight approaches to addressing this changing landscape, to meet both student and industry needs. Positioned not as a definitive theoretical model for transdisciplinary design education but instead as a collective of chapters in which many forms of learning are explored, we aim to weave a narrative that supports the reader in a journey towards an understanding of how they might move towards developing transdisciplinary design practices across a contemporary design curriculum.

### *Exploring transdisciplinarity*

‘Transdisciplinarity’ is a term used to describe a process in which disciplines work together to explore problems subordinating disciplinary processes and methods for the common goal of solving the problem or challenge (Blessinger and Carfora 2015: 30). According to Nicolescu (1999: 2), transdisciplinarity also concerns that which is located simultaneously within disciplines, across disciplines, and beyond disciplines. Transdisciplinary learning can be a messy process and the lines between cross-, multi-, and intradisciplinary can be blurry. In fact, according to Jahn et al. (2012), there is no ‘universally accepted definition even after 40 years of intensive scholarly discourse’. Thompson et al. (2017) assert that ‘while there is a growing body of literature on such approaches, there remains no widely-accepted definition, concrete framework, or empirical strategy for how to carry out a transdisciplinary project’. In order to understand what transdisciplinarity means in the context of this book, this introduction defines key terms and provides a framework for understanding teaching and learning in transdisciplinary forms.

A good summary of intra-, cross-, multi-, inter-, and transdisciplinarity is proposed by Jensenius (2012):

- Intradisciplinary: working within a single discipline.
- Cross-disciplinary: viewing one discipline from the perspective of another.
- Multidisciplinary: people from different disciplines working together, each drawing on their disciplinary knowledge.
- Interdisciplinary: integrating knowledge and methods from different disciplines, using a real synthesis of approaches.
- Transdisciplinary: creating a unity of intellectual frameworks beyond the disciplinary perspectives.

While multi- and interdisciplinarity are often not only appropriate but also a requirement for design innovation (i.e. psychology and aesthetics of user experience, coding requirements for product testing, material properties of design

elements, etc.), it is only through a transdisciplinary approach to design education that a systemic and integrated view of environmental problems and constraints can be properly conveyed to future designers. Multi- and interdisciplinary practice in design can achieve innovation in specific layers of reality. However, through the integrated understanding of our present reality that transdisciplinarity enables, the design of new levels of reality (Nicolescu 2012) and of entire new future worlds becomes a possibility.

Transdisciplinarity responds to the challenge presented by complex phenomena that go beyond established fields, generating a ‘movement in the direction of the coherence, unity and simplicity of knowledge’ (Aram 2004: 382). Transdisciplinary phenomena can only be successfully tackled by design through conscious synergy between transversal epistemologies that cannot be reduced to different combinations between various disciplines. Nicolescu (2014b) brings attention to the different characteristics and goals of transdisciplinarity in relation to multi- and interdisciplinarity:

Multidisciplinarity concerns itself with studying a research topic in not just one discipline only, but in several at the same time. Any topic in question will ultimately be enriched by incorporating the perspectives of several disciplines. The multidisciplinary approach overflows disciplinary boundaries while its goal remains limited to the framework of disciplinary research. Interdisciplinarity has a different goal than multidisciplinarity. It concerns the transfer of methods from one discipline to another. Like multidisciplinarity, interdisciplinarity overflows the disciplines, but its goal still remains within the framework of disciplinary research. Transdisciplinarity concerns that which is at once between the disciplines, across the different disciplines, and beyond all discipline. Its goal is the understanding of the present world, of which one of the imperatives is the unity of knowledge.

(Nicolescu 2014b: 19)

Edgar Morin, one of the most important contemporary thinkers of both education and complexity, has written extensively about the ways in which the study of transdisciplinary phenomena, as well as transdisciplinary epistemology, can help humanity face the challenges of post-modernity (1992, 2001, 2007). He argues that we are living within a historical moment in which the very foundations of science are being challenged by whole new paradigms, such as complexity and quantum physics (2001). In parallel to these challenges, new kinds of ethical questions and dilemmas emerge from accelerated processes of technological advancement such as biotechnology, artificial intelligence, surveillance, and drones. Intelligent networked technologies, in every way connected to systemic design, have transformed and reshaped educational processes.

Moreover, evolving as a result of continual technological advancement, design becomes planetary: terraforming and geoengineering are good examples of the giant scale of transdisciplinary phenomena emerging via converging technologies. The origin of both technological and systemic design is multidisciplinary, coming from various sources of knowledge and data; its development is interdisciplinary, coming from interaction between different talents and skills; and its results are transdisciplinary and capable of being applied to any field. The future of design education must encompass elements from multiple disciplines (multidisciplinary) that are interacting with each other in ways that create synergy (interdisciplinarity), in order to provide transversal answers to complex problems (transdisciplinarity).

Transdisciplinarity requires a non-confrontational approach with a united vision in which accountability is shared; a community of practice based on principles of reciprocity. Further to the themes already discussed, transdisciplinarity can be difficult to ‘sell’ to students and some academic staff, but that does not absolve educators of their responsibility to ensure such learning takes place. Through institutional support, in conjunction with genuine and authentic partnerships with students, industry, and community, a shared accountability and a clear and explicit vision can be achieved to advance transdisciplinary and multidisciplinary design-based offerings.

### *Introducing our Australian design education context and collective learnings*

This book offers a series of rich, descriptive cases of learning approaches and curriculum design, including some deeper-level case studies providing analysis of students’ experiences, positions, and outcomes. The strength of the book lies in its dominant setting being Australia and offering a depth of examples from within a single-institution design education context – the Queensland University of Technology (QUT) in Brisbane.

Explored in Chapters 1 and 2, the QUT School of Design was able to build transdisciplinary opportunities into its curriculum through a review of their course offering in 2017, which led to a restructuring of the Bachelor of Design that was rolled out in 2019. The leadership in the School of Design championed the new curriculum by building the school culture around transdisciplinary design collaboration. It was therefore the ideal situation for embracing this type of learning. We recognise that not all institutions have the culture or structure to shift their entire curriculum in this direction; however, the strength of this book is that it showcases the possibilities of what can be done in this space if the culture is ripe for it.

As discussed above, the future of design education must encompass elements from multiple disciplines (multidisciplinary) that are interacting with each other

in ways that create synergy (interdisciplinarity) in order to provide transversal answers to complex problems (transdisciplinarity). For the purposes of this book, transdisciplinary is utilised for its ability to transcend disciplinary outcomes and to create new and novel solutions intended to broadly impact society. Although some examples in this book encompass only two aligned design disciplines, while others converge a multitude of disparate disciplines, we frame them all as aiming for transdisciplinarity, a transcendental result that is beyond a single disciplinary context or competency. And examples described of the design challenges faced endorse the need for such aspirations.

Collaboration is a key factor in all types of transdisciplinary learning experiences. While collaboration can be fostered through a number of team-based teaching experiences, a focus on an additive transdisciplinary approach – where collaborators draw on knowledge, theories, and methods from different disciplines but without deviating from the approach of their individual disciplines – can create transcendent experiences for students. Techniques of self-directed and self-regulated learning through work-integrated learning (WIL), as well as experiential learning through short-term study, are explored as a means to encourage resilience and agility for students entering the contemporary world of work.

Examples within this volume show how transdisciplinary design education can take place on a range of scales:

- Local, within a course, ranging from small studio-based experiences to large-scale compulsory core units.
- Immersive experiences that span a range of activities, including WIL facilitated through external partnerships.
- Global transdisciplinary immersive learning experiences that may include study tours to situate learning in unfamiliar and new contexts.
- Accelerated learning experiences with intensive or compressed activities.
- Online immersive learning experiences that may include multiple local and/or global university and/or industry alliances.

Learning examples can also be trialled at a micro level and therefore we are optimistic that approaches are transferable and might be considered and applied across global design and education contexts. It is important to note the different approaches, tones, and perspectives of chapter authors are evident in such a range of cultural backgrounds. However, what is presented as discrete learning examples in some chapters and an exploration of curricula in others goes beyond individual cases when considering the singular institution at which these examples are situated.

Thus, the overall attempt is to give a holistic view of how a transdisciplinary design curriculum can come together. However, we fully acknowledge that, by nature, transdisciplinary interactions can be messy. For the purposes of applying this to a broader approach, we propose the conditions to support effective curriculum development for transdisciplinarity below.

Designing effective transdisciplinary curricula requires transdisciplinarity to:

- be deeply embedded in and across the curriculum and implemented in different ways at different stages of students' learnings;
- respond to 'wicked problems' typically not able to be addressed by single disciplines alone;
- take place through collaborative, authentic, and experiential learning, which may also be project, problem, or process based;
- be situated within or integrated with local or global professional workplace or educational contexts.

Throughout the book, many examples explore the ways in which transdisciplinary learning experiences can transform students' professional identity. The point is made that students may persist in defining themselves by disciplinary identity and are, in the main, naturally more comfortable in their own disciplinary areas. When seeking to expand their studies, students often explore allied disciplinary areas, hence the suggestion to follow the points noted above. Opening curricula to authentic contexts and challenges provides optimum conditions for transdisciplinary learning to flourish.

WIL experiences are important boundary-crossing activities for students' professional development and self-development to become designers who are comfortable working in transdisciplinary ways, and with an appreciation of the strengths such approaches bring to complex design challenges.

A diversity of WIL experiences enhances students' career development, and their ability to operate successfully in a future transdisciplinary world. These collaborations with students and professionals from other disciplines mirror authentic future professional contexts and cultivate students' career identity. We show that teamwork and learning that crosses and exists beyond disciplinary bounds can lead to better student outcomes and enhanced academic achievement. Extending



students' learning experiences beyond the narrow or local, and into more holistic, wider national, or international contexts can equip emerging designers with a deeper sense of their own positionality, while offering learning opportunities for them to engage in culturally safe ways with diverse perspectives, contexts, and approaches.

Acknowledging this critical need for inclusive and respectful learning approaches and contexts, we recognise that First Nations peoples' knowledge and relations transcend disciplinary boundaries, with a focus on interconnect- edness, wellbeing, and connection to Country. The privileging of Indigenous voices in design education is critical for sustainable design practice. This may be achieved through emphasising:

- community-based conversations,
- community-led outcomes, and
- relationship-based approaches to knowledge dissemination.

A deep understanding of inclusivity and diversity is fundamental to being a good designer, and evidence shows that wicked global problems cannot be solved through narrow or local understandings only.

To inform a global perspective, academics and design practitioners from Australia, Europe, North America, Asia, Africa, and the Middle East, representing a range of cultural backgrounds and disciplinary areas, explore transdiscipli- nary learning throughout this book. With the end goal of providing a basis for understanding these activities and how they might be applied in an educational setting to achieve transformational outcomes, the book showcases the success of these endeavours, as well as the difficulties in approaching and actioning them.

Global experiential transdisciplinary learning can be incorporated into design programs of study in a range of ways. For example:

- through immersive short-term international study tours or institutional exchanges;
- through a full year (or part of a year) spent studying abroad (some insti- tutions also allow for a period of work abroad within their programs of study);
- through online immersive and interactive learning with cohorts or external collaborators divided across (international) space and time.

Integrating short-term international study tours within design programs both aids in increased cultural awareness in students and facilitates heightened career capabilities. While such activities can present risks, those risks are heavily outweighed by the reward to students. It should be acknowledged (and not only due to the current pandemic era) that contemporary design work is now widely achievable in virtual environments, which provides a myriad of opportunities for international design collaborations to thrive in online spaces. Considering the increasing need for graduate capabilities to embrace global ways of thinking and doing that span both social and professional domains, building strong cross-cultural capacity is important.

Positive cross-cultural relationships can be fostered through transdisciplinary design projects that provide diverse pedagogic environments for developing working relationships and overcoming cultural misunderstandings or taboos. As with many endeavours detailed in this book, while global experiences and collaborations may take additional effort and resources to establish, they yield innovative interactions across national boundaries and provide the unique benefits of diverse perspectives and contexts.

A significant global learning brought about by the Covid-19 pandemic is that to effectively solve this problem, humanity must collaborate across many disciplines and cultural backgrounds. It is no longer ‘someone else’s problem’ – it is everyone’s problem. In this case, there is no single discipline that can address these problems, and transdisciplinary collaboration is not only necessary it is essential. In this example, and as we highlight throughout the book, what unites us is always greater than what divides us. As showcased in this book, different design disciplines – from architecture to fashion design – have distinct skill sets and offer diverse methodologies and practices. However, at the core of each area, an understanding of a common approach and design process prevails. Combining two or more design disciplines in a learning experience can offer interesting new approaches – particularly in the case of understanding the nuances, technical terms, and complexities in these fields as essential to working in any area of design. This book also explores mixing design disciplines with diverse disciplines such as nursing, teaching, and culinary arts. In these study experiences, a bridge between disciplines is gained through addressing issues from multiple perspectives to provide new and innovative insights. We argue that both approaches offer rich sites for transdisciplinary understanding and therefore are both valid methods of fostering transdisciplinary competencies.

### *Overview of chapters*

This book is organised in four parts: (1) ‘Designing effective transdisciplinary curricula’; (2) ‘Transforming professional identities through transdisciplinary

learning’; (3) ‘Strategies for incorporating global experiential learning in design programs’; and (4) ‘Global transdisciplinary education’. Each part contains three chapters, and each chapter is explored through a different lens, ranging from small-scale learning approaches to wholesale curricular changes, and from descriptive accounts to comprehensively researched case studies. These are presented by a broad range of academics from different disciplines and cultural backgrounds. We do not assume a singular voice, and the tone and formality of each chapter therefore vary according to its context. In Chapter 6, which looks at Indigenous approaches to design education, for example, it is more culturally appropriate to speak through personal narrative, whereas in other parts we adopt a more formal academic language, tone and approach. Project-based and practical learning examples are used throughout as a means of providing an understanding of how inter- and transdisciplinary methods can be employed in a variety of educational experiences. We discuss these methods primarily within the frame of our Australian design curricula, but also within the context of Australian students participating in overseas study tours, in addition to referencing practices in a range of global institutions.

Part 1 looks at the complexities and challenges in designing effective transdisciplinary design programs. Chapter 1 employs a case-study approach to explore and reflect on the development of an undergraduate design course in a major Australian university. As this curriculum was developed with a number of features designed to facilitate and encourage transdisciplinary learning, the chapter reviews the shared units and the use of transdisciplinary group collaboration to facilitate cognate and non-cognate secondary fields of study chosen at the student’s discretion. Furthermore, this chapter reflects on the evolution of a design course over fourteen years of implementation. The successes and failures of these attempts at curriculum divergence are presented along with observed barriers to transdisciplinary learning.

As a means to explore ways of embedding professional outcomes and capabilities in a design curriculum, Chapter 2 reviews collective internal and external stakeholder needs and sound educational precepts in the creation of a design curriculum. In focusing on developing a transdisciplinary core to the curriculum, this chapter discusses the development of a transdisciplinary suite of four units called ‘Impact Labs’. Titled ‘Place’, ‘People’, ‘Planet’, and ‘Purpose’, these units include students from seven different design disciplines. The four units are a compulsory part of the curriculum for all students – discrete yet linked units of study scaffolded across the program and designed to engender transdisciplinarity in authentic design contexts. This chapter covers the challenges of delivering large-scale transdisciplinary learning experiences and provides a case for the coming together of many disciplines within a suite of core units, to form a future-focused narrative of ethical, responsible, and transformational design for positive global change.

With the dominance of online and flexible delivery options for all university programs due to the 2020 global pandemic, Chapter 3 reviews the challenges of online delivery in a design fabrication unit that straddles the space between pure disciplinary areas and the transdisciplinary Impact Labs introduced above. The chapter grounds reflections on the evolution of teaching from face-to-face to online in notions of finding common ground and transdisciplinary perspectivism, as well as a set of beliefs that underpin teaching intentions and actions across three iterations of the unit.

The inclusion of transdisciplinary voices in design education provides a critical foundation to the concepts of belonging and connection, and supports the fluid needs of culturally and professionally diverse designers and their collaborators. Part 2 examines the way in which professional identities can be transformed through transdisciplinary and authentic learning. Chapter 4 presents a number of WIL experiences facilitated by an Australian creative industries faculty. This research investigates both challenges and opportunities, and what these experiences of a professional workplace learning context offer to students. Many of the creative industries are structured around small independent operators and entrepreneurs who, while interacting with other professionals, may not operate in a truly connected and transdisciplinary environment. How the different modes of WIL are impacted by these contexts is explored using the framework of the ‘learning project’ as explicated by Delahaye (2005). This framework is aligned with the issues of WIL and used to identify opportunities for and barriers to offering a connected and collaborative WIL experience to students.

In Chapter 5, the role of WIL and community engagement, and their importance to the context of higher education in Australia, is investigated. Considering the difficulties of genuine integrated work experiences – particularly during the pandemic – this research proposes a framework to build robust professional identities, resilience, and agility, and to prepare graduates for an increasingly complex world. This case study presents an understanding of WIL applied in a transdisciplinary context and provides evidence that collaboration with professionals from other disciplines can offer broader opportunities for students to reflect on their own professional identities and unique sense of belonging than typically seen in a singular discipline approach.

The inclusion of diverse voices and practices is especially important in contemporary Australian design practices, and Chapter 6 explores the interrelations between First Nations perspectives and transdisciplinarity as a construct. While incorporating this into a design curriculum can be challenging, the authors explore ways to work together respectfully with First Nations industry partners in establishing WIL that embeds principles of respect and cultural competence. Through multiple case studies, the authors take the reader on a journey to explore the

challenges and benefits of working with and within a community, and to gain community-led outcomes and relationship-based approaches to knowledge dissemination. The authors provide an understanding that the positionality of educators and the privileging of First Nations voices in teaching, curricula, and research are essential. They posit that this knowledge transcends notions of transdisciplinarity, as multiple realities exist at the centre of Indigenous learning and teaching.

Global experiences provide students with a connection to other cultures and a broader understanding of global design practices. Part 3 reviews different approaches to incorporating transdisciplinary student experiences into a design curriculum in a global setting. Chapter 7 presents a case study in which academics were challenged to facilitate a cohesive study-tour program to the United States for a large transdisciplinary group of Australian students. Through an understanding of risk and its relation to creative practice, the authors explore what makes an international study tour rich for student learning. The uncertainty that prevails in this context provides a heightened opportunity for students to strengthen their personal identity beyond disciplinary bounds and to question their values, assumptions, and stereotypes.

Regardless of the country or discipline, a design student chooses to practise in, building cultural intelligence is becoming an essential skill in our increasingly globalised design sector. Chapter 8 presents a case study for understanding how cultural intelligence can be enhanced by providing students with transdisciplinary study experiences in cultures that are significantly different from their own. During a multi-year Asian study-tour program, industrial design and fashion academics offered Australian students the opportunity to network with and observe a range of design practices in Hong Kong, Mainland China, and Japan. Through these experiences, students were challenged to reflect on their practice in a multicultural as well as a transdisciplinary context.

Many design practices in Australasia are exploring the bridge between the past and present. In Chapter 9, practical learning examples that review the history and process of creating a pavilion give evidence of the importance of cultural and disciplinary exchange in the conception of built forms. A pavilion project that took place in the Australian context evolved into a global setting, with the authors providing an overview of how it will be expanded and adapted to facilitate a study tour in Bali for Australian and Indonesian students. Overall, this chapter provides the reader with an understanding of how to lead a multifaceted industry-led project with a multidisciplinary group of Australians and how to evolve this type of project into a global tour experience.

Part 4, the final part of this book, explores global transdisciplinary education. Chapter 10 compares transdisciplinary learning experiences in the East and West, through an exploration of study experiences that included students from

Turkey, Switzerland, Germany, Singapore, Taiwan, Hong Kong, and Australia. Through two practical learning experiences that brought students from a range of different cultures and disciplines together, the authors review the challenges of working together on design issues that impact all nations involved. Utilising transvergent and co-design processes, the authors suggest different models to best prepare students for working in cross-cultural environments. A comparison between European and Asian contexts provides a further understanding of how cross-cultural experiences in transdisciplinary design projects can develop the capacity of students to be globally aware and be engaged global citizens.

Global transdisciplinary teaching experiences are showcased in Chapter 11. Project-based and practical learning examples that review transdisciplinary projects in the United States, China, Indonesia, and Australia provide an understanding of the best approaches to these types of learning experiences. This chapter defines four approaches that are frequently employed in transdisciplinary teaching as a means of facilitating rich learning experiences. Learning examples of transdisciplinary teaching projects from the four countries represented are framed within the context of process-based learning, problem-based learning, experiential learning, and problem-oriented project learning methods. Overall, this chapter aims to facilitate an understanding of best practices from a global perspective.

Many design schools around the world are adopting transdisciplinary approaches to their programs. Chapter 12, the final chapter of Part 4, compares a design school in Australia to one in Dubai to showcase the application of transdisciplinary practices in action. This chapter provides a global overview of design schools in relation to their adoption of transdisciplinary curricula. A newly established design school is compared with a school with over 100 years of history, to provide an understanding of how transdisciplinary practices can be adopted and applied in different contexts. The aim of this chapter is to showcase how transdisciplinary design education can be the ‘new normal’ for all design schools – a central message that underlies this book. Following the four parts, a concluding chapter draws together complexities surfaced and conceptual tools and theories explored across the book. While laying out the myriad difficulties faced in developing and delivering transdisciplinary design education, it simultaneously offers a comprehensive set of tools that provide a solid grounding and pathway to navigate any future transdisciplinary intentions. This advances the conversation towards a more positive and productive space, with broad applicability across a range of educational contexts.

As explained by Veryzer, design is ‘a way of projective thinking, planning and communicating, not based on a set of universal values and objectives, but on criteria of appropriateness and process quality’ (2002: 51). While design can be used to describe the overarching theory behind many disciplines, such as architecture,

landscape architecture, graphic design, interior design, fashion design, interaction design, and industrial design, it cannot be defined by a single discipline. As a process, design transcends disciplines and has the ability to foster growth in the areas of business, health, and culture, among others. Design is, in essence, the original idea in everything. Designers are innovators, creators, and inventors. The importance of design is ever-increasing as the world experiences an exponential rate of change and obsolescence. Design has always been collaborative; however, now more than ever, designers need to work beyond the boundaries of their discipline areas and to have a deeper understanding of many different contexts. Transdisciplinary design projects can challenge the assumptions inherent in our disciplinary and cultural thinking. Rethinking the way we approach things and thinking about the outcomes of our decisions from multiple perspectives are essential in tackling the challenges of our interconnected world. Ultimately, a truly transdisciplinary designer will be able to envision ways to improve the world around us in new and novel ways. This book explores practices in design education that provide pathways towards transdisciplinary futures – to rethink complex challenges, to forge new ways of thinking and doing, and to create new spaces and narratives that transcend disciplinary boundaries.

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# Contemporary Design Education in Australia

This book offers a range of approaches to teaching higher education design students to learn to design collaboratively and creatively, through transdisciplinary, multidisciplinary, cross-disciplinary, and interdisciplinary learning experiences. It highlights that the premise of traditional disciplinary silos does little to advance the competencies needed for contemporary design and non-linear career paths and emphasizes the importance of higher education being responsive to changes in society, including fluctuating market demands, economic variations, uncertainties, and globalization. Chapters highlight approaches that address this changing landscape, to meet student, industry, and societal needs and reflect a range of design education contexts in which the authors have taught, with a focus on experiences at the Queensland University of Technology (QUT), Brisbane, Australia. Contributions also include collaborations and comparative discussions elsewhere in Australia and globally, including Europe, Asia, the Middle East, and the United States.

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