

Contemporary Design
Education in Australia

Contemporary Design Education in Australia

Creating Transdisciplinary Futures

EDITED BY

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This is a peer-reviewed publication.

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.

Contents

List of Figures	xiii
List of Tables	xvii
Foreword	xix
<i>Dr Brandon Gien</i>	
Acknowledgements	xxiii
Introduction: Design and the Changing Educational Landscape	1
<i>Lisa Scharoun, Deanna Meth, Renata Lemos Morais, and Philip Crowther</i>	
Exploring transdisciplinarity	3
Introducing our Australian design education context and collective learnings	5
Overview of chapters	9
PART 1 DESIGNING EFFECTIVE CURRICULA: TOWARDS TRANSDISCIPLINARITY	17
<hr/>	
1. Curriculum Design and Development to Enhance Transdisciplinary Skills Development	19
<i>Sheona Thomson, Andrew Scott, and Philip Crowther</i>	
The changing role of universities	20
Building a new faculty framework	22
Transdisciplinary units	27
Transdisciplinary elected studies	30
Discussion	36
Conclusion	36

2.	Developing Twenty-First-Century Design Professionals through Impactful Curricula	42
	<i>Deanna Meth and Dean Brough</i>	
	Background and context	43
	The Bachelor of Design Program, 2019 Onwards	53
	Concluding thoughts	58
3.	Making Things Online: Transforming an Interdisciplinary Design Fabrication Unit for Online Delivery	65
	<i>Levi Swann</i>	
	Introducing Design Fabrication	66
	Shifting online, shifting perspective	73
	Discussion	82
	Conclusion	84
PART 2	TRANSFORMING PROFESSIONAL IDENTITIES THROUGH TRANSDISCIPLINARY AND AUTHENTIC LEARNING	89
<hr/>		
4.	Identifying Opportunities and Barriers for Transdisciplinary Work-Integrated Learning (WIL) Experiences for Future Design Professionals	91
	<i>Sarah Briant, Philip Crowther, and Lindy Osborne Burton</i>	
	What is WIL?	92
	Study context	99
	Research methods	100
	Discussion	106
5.	Transforming Engagement through Authentic Collaboration: Transdisciplinary Learning for Design Students and Preservice Teachers	112
	<i>Lindy Osborne Burton and Lyndal O’Gorman</i>	
	Contextual background	113
	Transdisciplinarity and teamwork	115
	Transformational pedagogy, authentic learning, and <i>WIL</i>	119
	Professional identity and interactions	120
	Method	122

CONTENTS

Findings	123
Implications for practice	127
6. I Am Not the Expert: Indigenous Perspectives and 'Transdisciplinary Education'	133
<i>Alayna Renata, Scott Parlett, Jackie Kauli, Verena Thomas, Owen Cafe, and Melanie Finger</i>	
Case Study 1: Design for social good: Aboriginal perspectives in an intensive Impact Lab context – First-year unit	135
Case Study 2: People and Place: Positionality, constraints, and opportunities in design education	141
Case Study 3: Transdisciplinarity in social research with Indigenous communities	146
Discussion and conclusion	152
PART 3 STRATEGIES FOR INCORPORATING EXPERIENTIAL LEARNING IN DESIGN PROGRAMS	157
<hr/>	
7. The Travelling Professional in New York: A Study of an Experiential Transdisciplinary Study Tour	159
<i>Dean Brough, Sarah Briant, and Melanie Finger</i>	
Benefits and challenges of short-term international study tours	160
Australian international short-term study tours	163
QUT Creative Industries New York short-term study tour	164
Future opportunities	174
Conclusion	174
8. Transforming Perspectives: Fostering Cross-Cultural and Transdisciplinary Competencies through Industry Engagement in a Short-Term Study Tour	179
<i>Lisa Scharoun, Rafael Gomez, and Tim Williams</i>	
Towards an understanding of design and the role of a designer	181
The importance of cross-cultural experiences in design education	183
Towards an understanding of differences in workplace cultures in Asia and Australia	184
Overview of the Immersive Asia Study Tour program	186

Vision and aims (industry, cultural, institutions)	187
Overview of workshops	194
Reflections and evaluation	197
Conclusion	199
9. Authentic Project-Based Learning: Designing a Pavilion for the Botanica Festival	204
<i>Kirsty Volz and Sarah Briant</i>	
Background: Pavilions in Australia	205
Transdisciplinary design approaches	206
Comprehending an iterative design process through authentic project-based learning	216
Conclusion	219
PART 4 GLOBAL TRANSDISCIPLINARY EDUCATION	223
<hr/>	
10. Understanding Design Culture from East to West: A Transdisciplinary Approach to Teaching	225
<i>Lisa Scharoun, Müge Belek Fialho Teixeira, Danny Hills, Frederico Fialho Teixeira, Daphne Flynn, and Raghavendra Gudur</i>	
Transdisciplinary mindset	226
Context: Experiential learning and transvergence	227
Reflection on teaching and learning practices	229
Cross-cultural collaboration	230
Application of teaching and learning practices to a global learning experience	231
Case studies	232
Conclusion	245
11. Approaching Global and Local Issues through Design: Examples of Transdisciplinary Projects in the United States, Indonesia, China, and Australia	249
<i>Gjoko Muratovski, Lisa Scharoun, Nina Hansopaheluwakan, Mengyu Chen, and Camilo Potocnjak-Oxman</i>	
Exploratory learning through a furniture design project in the United States	251

CONTENTS

Understanding the evolution of creative industries in China through project-based learning	255
Informing sustainable design solutions in Indonesia through <i>PBL</i>	259
An approach to designing healthy futures in Australia through problem-oriented project-based learning	264
Conclusions and reflections	268
12. Transdisciplinarity in Design Education: A Review of Design Programs with a Focus on Australia and the United Arab Emirates <i>Carlos Montana, Lisa Scharoun, Hani Asfour, and Renata Lemos Morais</i>	271
Preparing design students for unknown future challenges and jobs	276
Comparative review and discussion of DIDI and QUT School of Design	279
Comparative review and conclusion	287
CONCLUSION	293
<hr/>	
13. Working towards Transdisciplinary Futures: Complexities and Concepts in Education <i>Deanna Meth, Lisa Scharoun, Philip Crowther, Müge Belek Fialho Teixeira, Dean Brough, and Lindy Osborne Burton</i>	294
Complexities in aiming for transdisciplinary education	296
Conceptual frameworks for transdisciplinary education	300
Concluding points	304
Notes on Editors	311
Notes on Other Contributors	313
Index	323

Figures

1.1	Chart of student elective choice alignment with their primary major (discipline).	35
2.1	Curricular structure of the design program with a balance between disciplinary (depth) and transdisciplinary (breadth), interpreting curricular domains of knowing, acting, and being.	54
2.2	Summary of the suite of Impact Lab units and their key features.	57
3.1	Beliefs about knowledge in Introducing Design Fabrication, bridging quantitative and qualitative conceptions of knowledge.	68
3.2	Intentions and corresponding actions in the 2019 internal delivery of Introducing Design Fabrication.	75
3.3	A team of students collaborating on a design fabrication challenge in the design fabrication studio during the 2019 internal delivery of Introducing Design Fabrication.	76
3.4	Intentions and corresponding actions in the 2020 online delivery of Introducing Design Fabrication.	77
3.5	Final laptop and graphics tablet case design of student, Kilian Frunz, from the 2020 online delivery of Introducing Design Fabrication.	79
3.6	Intentions and corresponding actions in the 2021 online delivery of Introducing Design Fabrication.	80
3.7	Asynchronous collaboration on Miro by students, Alexander Hynd and Emma Dumble from the 2020 online delivery of Introducing Design Fabrication, and their final meal delivery food packaging design.	81

5.1	Design students discussing their proposal with the client and an ECE preservice teacher.	115
5.2	Design students presenting their design scheme to the client and an ECE academic.	116
5.3	Design students with their design proposals after a formal client presentation.	116
5.4	Architectural model of one of the design proposals.	117
6.1	Interactive wall, coffee experience; concept by Carol Ding, Melissa Haddad, Jackson Kidd, Tamaki Minto, Zhongjie Su, 2020; 3D model by Jackson Kidd and rendered by Tamaki Minto.	138
6.2	Curved community seating, welcoming interactive space; concept by students Matthew Van Tuinen, Tessa Marsh, Yui Wang Tang, Crystal Cheng, 2020.	138
6.3	People and Place design work by student Peter McKey – Songlines of a City.	145
6.4	CRID team member talking with the directors of the community-based organisations Kafe Urban Settlers' Women's Association and Kedu Seif Haus.	150
7.1	QUT Creative Industries faculty promotional banner for the New York Study Tour (Finger 2018).	165
7.2	QUT Creative Industries students outside the Metropolitan Museum of Art, New York Study Tour (Finger 2019).	168
7.3	QUT Creative Industries New York study tour major student activities (Finger 2019).	169
7.4	QUT Creative Industries New York study tour exploring the Dumbo area in New York with fashion designer and academic Yoon Chang (Finger 2018).	171
7.5	QUT Creative Industries New York study-tour student with Mike Kaback on a tour of the New York garment district (Finger 2018).	172
7.6	QUT Creative Industries New York study-tour students at the Guggenheim Museum (Finger 2019).	173
8.1	Students listen to a lecture by a designer at Ziba Design Studio (Tokyo)	188
8.2	Visit to the Shenzhen Design Centre (Shenzhen, China).	189

FIGURES

8.3	Students listen to a lecture and view product display at TTI Hong Kong.	195
8.4	Design workshop outcomes at TTI Hong Kong.	195
8.5	Students present concepts to Woolmark in Hong Kong.	196
9.1	Example of student, Baikun Gao's design for the bamboo pavilion.	211
9.2	Thumbnail images of student Shane Quek Hao Han's iterative design process, incorporating simulations from Lady Bug software, including climate data such as glare from sunlight and air movement. These drawings show a series of three iterations testing different design proposals through the software simulations.	212
9.3	Students presenting their work to external stakeholders. Presentations were conducted with professionals and the general public at the Botanica festival as well as with invited guests from the local council in the classroom.	215
10.1	The space of knowledge.	227
10.2	Transvergence.	229
10.3	Mev_movement (Adnane Karouach, Beyza Paksoy, Nur Kaumi).	233
10.4	Organized Chaos, Jeremy Pougand.	234
10.5	Students are briefed on protocol on a site visit.	236
10.6	Design thinking workshops challenge students to map the experience of ageing.	237
10.7	Students prepare their work for an exhibition at the National Design Centre.	238
10.8	Students observe residents in a care home.	239
11.1	Student sketches for furniture design solutions.	253
11.2	Exhibit of student projects at the INYC Design Festival 2018.	253
11.3	Students prepare the gallery for the final exhibition.	257
11.4	Student-designed objects for sale at the opening.	258
11.5	Students with lecturers and photographer Ling Xuemin.	259
11.6	Student work exploring overfishing (by Emeraldalda Putradinata).	263

11.7	Student work exploring outdoor advertising for Unicef (by Jonathan Martin).	263
11.8	Design and culinary arts students creating recipe solutions.	265
11.9	Students work in groups to create branding and packaging solutions.	266
11.10	Final product and packaging solution.	267

Tables

1.1	Three types of knowledge or unit within the undergraduate degree DE40 Bachelor of Design.	26
1.2	Percentages of students in the elected field of study, by discipline.	31
1.3	Evolution of the Bachelor of Design courses.	37
2.1	Interpreting the School of Design manifesto for the new Bachelor of Design course (extract from 2017 Course Proposal documentation).	50
2.2	Aims and intended learning outcomes across the Impact Lab units.	59
3.1	Fabrication terminology across disciplines.	71
4.1	Phases of a pedagogical pattern for WIL experiences compared with the seven steps for a learning project (Delahaye 2011: 311).	101
8.1	Summary of participants and activities for the Immersive Asia Study Tour.	190
8.2	Sample question from the informal survey.	198
12.1	Demographics of student cohorts, 2020–21.	282
13.1	Summary table detailing key concepts and frameworks related to theorising and actioning transdisciplinary education introduced across the book.	305

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’.¹

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

FOREWORD

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.

2

Developing Twenty-First-Century Design Professionals through Impactful Curricula

Deanna Meth and Dean Brough

The past decade has seen a dramatic increase in demand for transdisciplinarity in higher education. This has been articulated through shifting industry and employer needs, which in turn reflect ‘wicked problems’ – complex social or cultural problems that are difficult or impossible to solve (Kolko 2012) – facing us globally. It manifests as a growing pressure within higher education institutions for research, learning, and teaching to respond accordingly, extending beyond and across traditional disciplinary boundaries. Accompanying this are increased expectations on ensuring the relevance and impact of research, learning, and teaching. For education, this is seen in an expanding focus on both applied disciplines and ‘authenticity’ to real-world issues in curricula.

For design schools, it is important to consider what such imperatives mean for the nature of their curricula, and what features these might embody to be deemed of value or impactful to this new global context. Pre-2019, the Bachelor of Design curriculum at the Queensland University of Technology (QUT) in Brisbane, Australia, provided for a range of transdisciplinary opportunities, as Thomson, Scott, and Crowther discuss in Chapter 1 of this book. This chapter considers an extension to this narrative with a move from ‘transdisciplinarity as emerging and encouraged’ to ‘transdisciplinary futures as a must’ and deliberately built within students’ programs of study. The post-2018 QUT Bachelor of Design degree intentionally incorporates compulsory transdisciplinarity across the course through a suite of four ‘Impact Lab’ units. Further, the inclusion of a range of other course design features provides additional formal opportunities for students to deepen their knowledge, skills, and capabilities across disciplinary boundaries, for example through expanded degree pathways, including nineteen double-degree options

and an international pathway. We note the complexity in defining transdisciplinarity and working definitions provided by Jensenius (2012) elaborated on in the introductory chapter, and state from the outset the recognition of the aspirational nature of this endeavour, particularly in relation to what is possible in the earlier years of students' university studies.

The section following introduces the external and internal contexts that have heralded the shift towards mandated transdisciplinary approaches within the new design curriculum at QUT, discussing both strategic and educational drivers. This includes details of in-depth stakeholder consultations (industry partners, staff, and students) and our institutional and school ethos, which helped to shape the new curriculum. Consideration is given to the concept of impact as it applies to our curriculum, and the conceptual groundings for transdisciplinarity in this context are outlined. The discussion then moves to introduce the new curriculum, with a strong focus on the early development of transdisciplinary 'habits of minds' (McGregor 2017) in students through the Impact Lab units, spanning themes of place, people, planet, and purpose. As new features for 'impact' in the curriculum, we outline the foundations of an integrative pedagogy encompassing notions of self, others, and society, as well as experiential and collaborative learning. An important connection is made between expectations of transdisciplinary curricula to address complex global issues and transdisciplinary approaches most appropriate to delivering an impactful design curriculum. We situate the work within an overriding narrative that honours the importance of disciplinary depth while recognising that transdisciplinary educational aspirations are no longer optional but imperative.

Additional to presenting the curricular model for intentional transdisciplinary learning experiences, we reflect on the successes and challenges encountered in this formalised shift to transdisciplinarity within the Bachelor of Design degree. This includes the recognition that, while breadth is acknowledged as important, there is a clear need to sustain depth in design skills. For this, there has been a continued emphasis on, and growth of, design specialisations as a necessary cluster within students' degrees. We also recognise and elaborate on this development as a point in time, as well as notions that curricular evaluation and evolution are necessary for any course. This is fairly typical as institutional priorities change and, as with curricular shifts described in Chapter 1, reflection and refinement of this framework are ongoing through a longitudinal qualitative research project.

Background and context

Setting the context for transdisciplinary curriculum development necessitates consideration of a range of factors. External to universities, these include the

prevailing and emerging complex global issues such as health disparities, housing, and climate change, demanding new ways of working towards solutions and, linked to this, industry and employers reflecting the market response in striving to address such issues. This has a corresponding knock-on effect, with growing expectations for higher education to develop graduates as employees with the skills, knowledge, and capabilities to work in such new spaces, and as researchers are able to cross necessary boundaries. These expectations come variously from industry and employers, responding to national economic drivers, and students themselves, who are not only concerned about their financial futures but also becoming more critical of and engaged in global issues such as climate change and poverty and are passionate in wanting to help to address these. One obvious example of heightened youth interest is through the work of activist Greta Thunberg and the movement of global schools strikes for climate, but a deeper level of student interest and demand is captured, for example, through research into sustainability and social responsibility in education undertaken by a United Kingdom group, Students Organising for Sustainability (SOS-UK n.d.).

Locally, within QUT, institutional strategic drivers, as well as the School of Design ethos and academic aspirations for graduates, are all partly derived from and reflective of a shifting external context. However, the internal context also becomes its own unique setting, which brings in long-held academic values and traditions. These embody the sometimes-conflicting arguments about the purpose of higher education: on the one hand, as preparing graduates for the workforce – one’s ability to contribute meaningfully to the economic good (employability as a focus) – and, on the other, that higher education is about developing thinking and questioning socially aware citizens (a more critical pedagogic framing) (Molesworth et al. 2011). In reality, most higher education institutions attempt to straddle the full spectrum and achieve both, and the design curriculum is no different. Much negotiation then takes place in curricular spaces. This broad set of considerations represents the typical ‘zones of influence’ on curriculum (Barnett and Coate 2005: 71) and fuller considerations of these with respect to the QUT design course are captured in Meth et al. (2021: 250).

Chapter 1 explored the evolution of QUT’s design course to the end of 2018, tracking the growth of interdisciplinary learning opportunities. Further external pressures and internal strategic drivers led to large-scale change for the course from the start of 2019. These changes were not only in response to industry needs and/or a growing transdisciplinary agenda. Referring back to ‘zones of influence’, other imperatives for changes to the course existed, such as an institutional move for degree structures to match the predominant Bologna structure of a three-year undergraduate degree, with a two-year postgraduate opportunity, as opposed to a four-year undergraduate degree, as well as student or market demand for

double-degree offerings and an international ‘sandwich-year’ option. Recognising the breadth of influences on a changing course, in keeping with the theme of the book, this chapter focuses on transdisciplinarity as engendering impactful curricula. The section following introduces more specific evidence that increased the need for a shift towards transdisciplinarity as mandated, through reference to key research in the literature and our own qualitative research findings captured through consultation with key external and internal stakeholders during the development of the new degree. We also reflect briefly on ‘impact’ as it relates to our strategic agenda, and how this plays out in curricular terms.

The changing external context

Across the higher education sector, there has been a steadily growing recognition that ‘Real lives are not disciplinary’ (Kaufman et al. 2008: 184) and that there is a need for increased opportunities for authentic interdisciplinary and transdisciplinary learning, accompanied by authentic assessment. Millar (2016: 474) cites a range of Australian government reports and studies that evidence increasing national demands for interdisciplinarity in higher education and elaborates on the resultant curricular responses to this. Within these changes lie the implicit understanding that learning in this real-world way will better prepare graduates to be able to ‘deal with the world’s big problems’. Parker (2010: 327) has noted the perils of applying fragmented knowledge in a ‘joined-up world’ where holistic approaches are key to tackling the complexity of many challenges that, for example, in the case of issues related to sustainability might encompass factors related to culture, society, environment, and economy. Interdisciplinarity and transdisciplinarity are seen as important for bringing disciplines to bear collectively on a ‘big idea’ as the focus, where the disciplinary areas come together with a shared goal in mind (Mackh 2018: 213), often with a ‘future focus’ where there is ‘as yet no clear solution’. Parker (2010: 332) further notes, however, the dangers of losing disciplinary grounding in preference to overdone knowledge ‘integration’ where there may be a danger of ‘reductionism’ with a loss of necessary disciplinarity. This highlights a key challenge in when and how transdisciplinarity is introduced into students’ learning journeys. Debates around when it is feasible for students to bring genuine disciplinary perspectives to collective transdisciplinary endeavours and whether they need to form their disciplinary ‘cognitive map’ (Mackh 2018: 214) and identity first are important here.

From both first-hand experience and that of being situated within national and international interdisciplinary learning and teaching networks, we have observed some successful and impressive attempts to introduce transdisciplinarity to courses (e.g. Manchester School of Art’s ‘Unit X’, where students from different

disciplines work on live project briefs with a wide range of partner organisations). Unfortunately, however, we are also aware of many universities that have tried and only partially succeeded or failed to introduce interdisciplinarity and/or transdisciplinarity to courses. These instances often manifested as ‘bolt-on’ activities, such as not-for-credit modules, behemoth activity or challenge weeks, and short-lived boutique units. Reflecting the complexity of what is asked of them in terms of collaboration and learning, necessitating boundary crossing, with a meaningful attempt at finding solutions to authentic challenges set, such curricular components are in themselves ‘wicked problems’. They tend to be unwieldy to administer, with institutional and departmental structures simply not set up to cater for them (Russell et al. 2008: 577). They are often expensive to run and, in general, a hard sell to both students and staff, who in the main align to disciplines, carrying (sometimes valid) concerns of a tendency towards genericism with loss of disciplinary expertise. This chapter shows that the new Bachelor of Design, and the Impact Labs in particular, face similar challenges, with ongoing debate around the complexities and value they bring, and the most viable model to ensure their survival.

‘Future-ready’ design graduates: Global needs and design industry expectations

Design disciplines now intersect with previously considered disparate fields such as bioengineering, artificial intelligence, systems modelling, smart cities, sports and exercise science, and cancer prevention. Transdisciplinary design is noted as the ‘driving force behind the formation of the Australian Design Alliance in 2010’ (Hearn 2011) with the alliance bringing together organisations representing the breadth of designers in Australia. Also in an Australian context, but not dissimilar to the majority of global higher education settings, changes such as automation and technological advances and the rise of a virtually connected global workforce now see more individuals in multiple, sometimes ephemeral jobs (FYA 2015). As such, there is a systemic shift in contemporary design professions with myriad emergent career types, with the need to ensure that essential twenty-first-century skills are at the forefront of contemporary curriculum design. This branching out is also coupled with the global recognition that, in a world where ethical, political, and ecological responses are required to address global challenges, design practice must undergo a wholesale shift towards design futuring (Fry 2009). We need designers who are able to be ‘critically responsive to the minds, dreams, feelings, material conditions, dispositions, values and beliefs of people within the world they inhabit’ (Fry 2009: 101).

In his introduction to *Art and Design Education in Times of Change* (Mateus-Berr and Reitstätter 2017), with echoes of Parker (2010), Gerald Bast notes how

‘we are still accustomed to acting and arguing largely along linear patterns of causality within insulated boxes of fragmented knowledge’. He proposes that the ‘complexity of our societies and the challenges that they face demand a culture of questions and connections rather than one of answers and quantification’. This demands of students the ability to deal with uncertainty and ambiguity, and be looking outside of their disciplines, as well as recognising that such complex challenges may not be solved by one discipline alone. This view is endorsed by Fry (2009: 31) who notes the limitations of linearity and objectivity alone, and the necessary ecological approach needed for facing complexity, interconnections, and multidirectional causes.

Bridgstock (2013: 176) elaborates on the capabilities needed for twenty-first-century creative careers, noting that, while creativity, disciplinary depth of knowledge and technical skills are critical, a further set of capabilities exists that has not generally been enabled through traditional art and design pedagogies. Featuring alongside skills related to enterprise, entrepreneurship, reflection, social networking, and professional connections lies the need for transdisciplinary approaches, which, beyond multi- and inter-disciplinarity, break disciplinary boundaries to bring ‘synthesis and integration of knowledge and perspectives from multiple disciplines’ (Bridgstock 2013: 181).

Collectively, these provide the ability to navigate non-traditional and multifaceted career paths. The International Labour Organization (ILO) (2011: 19) reflects similar sentiments of constant flux and the need for flexibility beyond disciplinary boundaries with an ability to apply existing knowledge and experience to new areas.

Stakeholder consultation for the Bachelor of Design: Industry partners

During the development phase of the new three-year design program, in-depth focus-group discussions were held across two facilitated workshops, with industry partners representing all major study areas in design (architecture, fashion, industrial design, interaction design, interior architecture, landscape architecture, and visual communication). Themed ‘Reimagining the Bachelor of Design’, discussions revealed a clear charter to embrace and embed transdisciplinarity in the curriculum across all seven design majors. When asked specifically about the desired graduate outcomes from a reimagined course, feedback indicated a strong desire for graduates that not only developed deep disciplinary skills but also mirrored industry practices and needs for cross-boundary ways of thinking and working. There was a strong call for a course experience that facilitated cross-collaboration across and beyond the majors and year levels and included skills such as collaboration, communication, and problem-solving, reflecting Bridgstock’s (2013) comments

above. Partners' comments reflected their views on the need for graduates with transdisciplinary capabilities and included:

More connected graduates with all design disciplines and university Schools. Transdisciplinary not just multidisciplinary connection.

Flexible education fit for multiple industries/multiple roles in industry.

Ability to diversify cross-discipline/specialise as they wish.

It is important grads are exposed to multidisciplinary collaboration. This breeds respect, empathy and cross skilling [...] and allows disruption and less delineation.

The final quote mirrors sentiments noted above by Bast (2017) of the need to move beyond 'insulated boxes of fragmented knowledge'. Of relevance to the link between addressing complex global issues and transdisciplinary approaches, industry partners also noted the need for the inclusion of authentic or real-world experiences, including meaningful work-integrated learning opportunities in the course with broader graduate outcomes that embraced social and humanistic elements. This is not dissimilar to sentiments within Fry's (2008) design futuring construct, and feedback included comments such as:

Learn to collaborate, network, communicate and respect differing ways of working and thinking. Be open to a changing world.

Real clients, real projects – collaborate with industry partnerships. Exposure to other disciplines.

Understanding of the human condition, psychology, human behaviour.

Strong humanist position [informed by] philosophy, ethics, humanities, business/economics.

Such feedback reflects clear industry expectations for the design course to provide increased opportunities for transdisciplinarity, as well as core skills related to collaboration, and understanding diversity, difference, and society more broadly.

The internal context: Strategy and school community

As a prominent driver from within the university boundaries, the 2019 QUT institutional 'Blueprint 6' (QUT 2019) places a strong focus on the need for interdisciplinary and interprofessional learning within curricula. McGregor (2017: 13) notes that because transdisciplinary learning is relevant to and reflective of the world, it is authentic. Authentic real-world learning and assessment are also a key requirement of the blueprint and, at QUT, this is enabled through a set of curricular design features with a strong future-capabilities context. These

stress the importance of learning that foregrounds sustainability, innovation, and entrepreneurialism, as well as Indigenous Australian perspectives. QUT's future-focused curriculum framework has to date been the vehicle through which consideration of these elements is undertaken across the curricular lifecycle (Meth et al. 2020).

A new design school manifesto

Closer to the site of course context, in the School of Design itself, a new 2017 manifesto provided an ethos and framework for course revision (and reaffirmed other areas of activity in the school, such as research and external engagement). The manifesto gave a platform on which the new Bachelor of Design course learning outcomes might be developed, with further fine-tuning taking into account conversations with industry, staff, and student partners, and benchmarking with other universities (national and international). The new learning outcomes also encompassed expectations within the then QUT Blueprint 5 and Real World Learning Vision (not dissimilar to Blueprint 6 of 2019). Core sentiments of the school manifesto are now reflected across the course, and in particular within the Impact Lab units as part of embedded transdisciplinary approaches. Table 2.1 lists the sentiments and expands on how each was interpreted when considering a new design course. This manifesto and its aims for design education at QUT show distinct similarities to the concepts of futuring, humanistic approaches, and interconnectedness mentioned above.

Since course approval and implementation, there has been a bedding-in and maturation of the manifesto as the school debates its identity, and terminology also evolves. For example, at a 2019 School Retreat, staff debated the manifesto sentiments and the school's underlying values, with a stronger sense of the responsibility borne by designers in their decisions and actions, notions of positive change (vs. simply effecting change) and a continued commitment to transdisciplinarity in all its activities. In essence, however, the sentiments remain similar today. Notable in the ethos is the theme of design as transformational, an aspiration for design students' learning captured across Chapter 1 of this book and also the way in which it links to effecting change and disrupting. These collectively tie to themes of perpetual change and an unknown future, and notions of impact are reflected in the next section.

Students and staff: Shaping the needs of a new program

During the development phase of the new design program, multiple working sessions were held for academic and professional staff to collaboratively shape

TABLE 2.1: Interpreting the School of Design manifesto for the new Bachelor of Design course (extract from 2017 Course Proposal documentation).

QUT School of Design manifesto sentiment	Interpretation
Design is OPEN	We share agency and power in the design process through participatory methods of co-creation. We share the language and tools of design, making it accessible, hackable, translatable, and transferable.
Design is ETHICAL	We acknowledge the consequences of design and practice in ways that minimise our impact on the planet, that are mindful and deeply empathic and that respect the cultures, traditions, and places of others.
Design is OPTIMISTIC	We believe that design can foster and facilitate positive change by imagining alternative futures, breaking biases and activating the vast human potential that surrounds us. Design is intrinsically hopeful, and this optimism underlies all that we do.
Design is EXPERIMENTAL	We embrace curiosity and the unbiased exploration of ideas, materials, technology, and environments. To nourish this capability, we celebrate failure as a way of unlocking new ideas, approaches, and ways of doing and knowing. Such an ‘entrepreneurial’ mindset fosters a culture of openness, collaboration, and experimentation, equipping designers with the capacity to resist easy solutions and to seek new opportunities through iteration.
Design is TRANSFORMATIONAL	We employ transdisciplinary methods and build teams calibrated to the demands of the twenty-first century’s most pressing challenges, rather than disciplinary affiliations. We prepare designers to be resilient and adaptable, and to seek disruption to achieve transformational and beneficial step change.

course directions. It should be acknowledged that, at the time, there was some strong academic opposition to the move from a four-year embedded honours degree to a three-year program. This was perceived as a compression in learning and a shrinkage in disciplinary content. While clearly there was a full year less of study, the new three-year design degree was not attempting to condense four years into three, but rather offer a different educational product that might lead to new and different educational pathways and potentially a greater spread of career prospects.

Despite this perception, during staff curriculum design sessions it was clear that there was strong consensus for heightened student opportunities for real-world briefs to solve real-world problems, ideally in transdisciplinary contexts, and this heralded the development of the Impact Lab units. To open educational pathways and enhance graduates' career prospects, this change also saw the development of twenty new double-degree variants, as well as, over a period of years, changes in the postgraduate study pathways for architecture and landscape architecture. During one all-staff session in 2017, colleagues were asked to imagine attributes of 2025 design graduates that would be in demand by the industry. The themes that emerged included collaboration, global responsibility, empathy, human focus, open to change, resilience, arousing curiosity, and being disruptive. Unsurprisingly, as introduced earlier, accompanying these broader themes, discipline-specific skills and knowledge were identified as critical to the program – returning to the balancing act needed when developing curricula (Meth et al. 2021: 257) – as well as the need for solid disciplinary foundations to delivering transdisciplinary design education and ensuring that the stakeholder strategic and educational needs of the course were being addressed.

Across the design and implementation of the new program, the course team considered students' voices and longer term close working collaborations with student partners as integral to identifying the needs of the degree, in terms of both content and pedagogies. Early in the development stages, student conversations 'with sushi' helped to break the ice, offering spaces for relaxed but also sometimes challenging conversations. Additionally, students' and parents' views were gained more formally through focus groups facilitated by an external marketing agency as well as formal student representation on school committees. Comments from focus groups reflect students' sentiments about their learning and skills, and any proposed new offering:

Design disciplines to be able to interact and work alongside each other.

Myself and some of my peers are finding it difficult to comprehend what professional practice will be like after we finish the degree.

I think a double degree would be the best way to have industry ready graduates.

I believe one of the most important things that needs to be considered is more thought about collaboration between Interior design and Architecture.

To sustain student engagement and involvement in course design where benefits have been shown to be invaluable (Fitzgerald et al. 2019), following course approval, a team of seven student partners, who were current students on the course, were employed as part-time Course Design Associates. Sourced through a standard application and interview process, the students worked in collaboration with academics for over a year to develop the new curriculum. In addition to researching the views of fellow students, staff, and industry partners, they tested learning-design strategies across units and contributed to developing a transdisciplinary model for design portfolios (Meth et al. 2020) and a set of designerly capabilities that play out across the course and are brought together within the transdisciplinary Impact Lab units – the focus of this chapter.

‘Impact’ as strategic curricular intent

In this new curricular space, we have enacted notions of impact through the strategic context and school ethos outlined (Table 2.1). Themes of effecting positive change, designerly responsibilities, a future focus, and transformation are brought to the fore and are linked to our vision of a QUT graduate designer, and the multiple ways in which they might use their design knowledge, skills, and capabilities to ‘impact’ on society or the world in a positive way. These themes also infuse the research and engagement activities within the school through the QUT Design Lab with its slogan ‘Change by Design’, and a suite of research programs that straddle transdisciplinary spaces, addressing challenges related to emerging technologies, design robotics and digital fabrication, and design for health and resilient communities.

The Australian Research Council definition of research impact is ‘the contribution that research makes to the economy, society, environment, or culture, beyond the contribution to academic research’ (Australian Research Council 2021). Instruments that track and measure researchers’ performance in this space are highly contested and often seen as counterproductive to research endeavours. Rogers (2014: 5) has pointed out, however, that despite ‘austerity and accountability’ measures driving the agenda, opportunities present themselves to subvert and/or exploit the measures to do good work, for example in engaging communities.

Many parallels may be seen between the endeavours of a research impact agenda and a hypothetical curricular one. Research and teaching are now notably drawn together alongside stewardship and outreach in the Times Higher Education Global Impact Rankings (THE 2021), which assess all of these activities

in universities against the United Nations’ Sustainable Development Goals (UN SDGs) – encompassing sustainability in its broadest sense and linked to the UN aspiration ‘to promote prosperity while protecting the planet’ (un.org). In embodying impact through teaching and curricula, as with a disciplinary–transdisciplinary balance, we have sought to identify key places where this interpretation of ‘impact’ as a curricular theme might be most appropriate. Given the expectations of transdisciplinarity as a way of tackling complex global issues, it is not inappropriate then to see transdisciplinary approaches as a way to work through an impact agenda within a design curriculum. How impact is interpreted and experienced by students, staff, and external partners is under exploration as a key facet of research being undertaken on the Bachelor of Design curricular model and pedagogies. Early results of this research are presented in Meth et al. 2023.

The Bachelor of Design Program, 2019 Onwards

Taking the views and context outlined above into account, and learnings from pre-2019 courses outlined in Chapter 1, finding a suitable and sustainable way to embed transdisciplinarity in the new Bachelor of Design course was key. The three-year full-time Bachelor of Design undergraduate program was introduced in 2019. Structurally, it comprises

- a disciplinary core – students specialise in one of seven design disciplines: architecture, landscape architecture, interior architecture (spatial cluster), fashion, industrial design, interaction design and visual communication (experiential cluster);
- shared design foundation units for the two distinct clusters providing necessary skills and knowledge specific to each cluster (see [Figure 2.1](#)).

Additionally, as specific enablers of transdisciplinary approaches, it allows for

- double-degree options where students might combine their design degrees with engineering, information technology, law, property economics, science, or urban development;
- four Impact Lab transdisciplinary units, scaffolded across the three years of study, that draw on and extend from the seven diverse design disciplines, other double-degree disciplines, and the social and environmental contexts within which the design challenges situated;
- guided curricular pathways for optimal clustering of elective units by students, and a degree pathway with a year of international study.

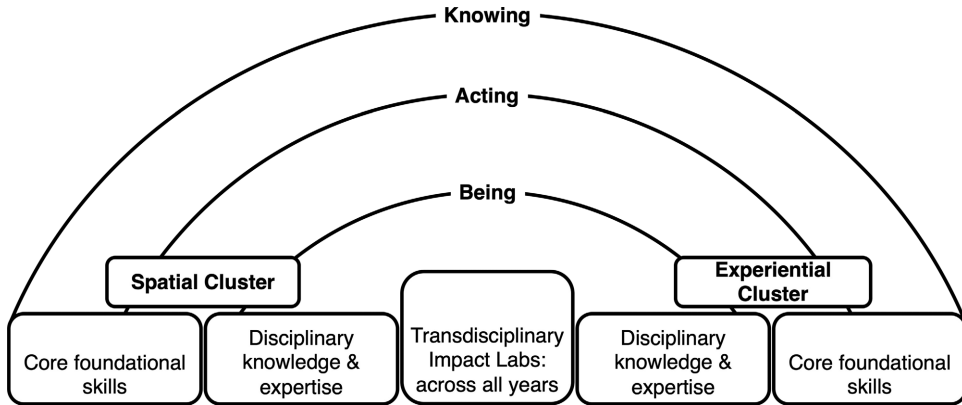


FIGURE 2.1: Curricular structure of the design program with a balance between disciplinary (depth) and transdisciplinary (breadth), interpreting curricular domains of knowing, acting, and being. Source: Meth et al. 2021: 252, drawing on a concept from Barnett and Coate (2005: 70).

Conceptual groundings for curricular aspirations

Knowing transdisciplinary opportunities to be fundamental to the new course and ensuring the external requirements of a design education were being met, deep consideration of the shape of the course was important. We situate the new curriculum within a framework that builds on transformative learning as key, as discussed by Thomson, Scott, and Crowther in Chapter 1, but considers more deeply the precise nature of transformation sought (Meth 2018) through two further conceptual frameworks. The first is that of Barnett and Coate (2005: 63), which suggests a clear balance across curricula in terms of knowledge ('knowing'), skills, and practice ('acting') – key building blocks for any curriculum, and the often more intrinsic capabilities related to a student's becoming or self-realisation ('being'). Figure 2.1 shows how these zones are not siloed into the different parts of the course – rather, they straddle sets of course components, with the transdisciplinary Impact Labs as the site where knowing, being, and acting come together most overtly.

The second conceptual framework specifically underpinning the aims of the transdisciplinary Impact Labs is that of integrative learning (Booth et al. 2009: 930) – 'intentional and connective' learning, which prepares graduates for an 'interdependent and volatile world'. It usefully links transformational learning processes to societal needs and contexts, and the fundamental requirements of design disciplines cited above in looking to future needs, as well as ethical,

responsible, and holistic practice. Drawing on Habermas and Nussbaum, Booth et al. (2009: 930) articulate a model of learning that encourages a simultaneous focus on self, others and society, which shifts the focus to examining oneself and societal needs beyond the economic. They note how economic imperatives have heightened siloed approaches to disciplinary knowledge and, at the same time, the rise of genericised and sometimes empty modules delivering ‘transferable skills’ – concerns discussed earlier in this chapter.

Not dissimilar to the Booth et al. (2009) model of self, others, and society, Noel (2017: 145), examining design curricula in Germany and the United States, notes the potential shortcomings of curricula that align with large industrial western economies only. In considering other global contexts, as well as a view that steps away from a ‘hegemonic western’ one, Noel proposes the crucial inclusion of social critique, sustainability, culture, responsibility, and entrepreneurship. He notes that the ‘whole world benefits when designers are more in tune with issues of development and culture’. Escobar (2018) notes this as a need for designers to contemplate the ‘praxis of our living’, and to reframe our views of what design is and its role in the world. For an Australian design curriculum, within this also lies the need to consider First Nations peoples’ perspectives alongside long-dominant westernised conceptions and consumerist models – sustaining a dialectical engagement between the two in an ongoing way (Rhea and Russell 2012: 23). Similar sentiments are endorsed by Macdonald and Macleod (2018: 313), who further note that global design education should strike a necessary balance between corporate and societal needs, aspiring to a critical, connectivist approach. Chapter 6 delves more deeply into the intersections between transdisciplinarity as a construct and Indigenous perspectives, highlighting a design challenge and partnership as part of Impact Lab 2, People.

Impact Labs 1–4: Place, People, Planet, and Purpose

Early formative thinking for the development of the Impact Labs derived from all-staff course development sessions. Collectively, design staff devised a suite of student experiences for collaborative real-world design challenges connecting with existing community and industry organisations. From the outset, ‘impact’, as explored above, and not dissimilar to the interpretation applied to research activities, referred to the broad intent of making a positive difference to the world, and ‘lab’ referenced the experiential teaching and learning approach already deeply embedded in the school’s practice. For the Impact Labs, the four themes of place, people, planet, and purpose evolved in the course development that followed, aligning with our aspirations for design addressing social, ethical, and environmental agendas, and wanting students to have a sense of self, belonging, and place

from the outset, yet be receptive to understanding the wider contexts within which they live and work. These aspects are summarised in [Figure 2.2](#). These link intrinsically to the integrative learning concept above, where consideration is given to self, others, and society (Booth et al. 2009) as well as fully answering to the development of Bridgstock's (2013) twenty-first-century graduate capabilities. Such pedagogic framing, and the complex challenges examined, also provide openings for exploring, understanding, and ultimately designing with deep consideration of the core concepts of entrepreneurship and innovation, education for sustainability, and Indigenous perspectives. The overarching pedagogic aims of the Impact Labs are distinct in shifting the focus from knowledge and skills acquisition alone, to wider capabilities and imperatives related to

- learner agency in navigating a complex and uncertain world;
- knowledge, skills, attitudes, and values in action;
- capabilities to transform society and shape the future with design principles for moving towards eco-systemic change.

The Impact Labs are intentionally scaffolded across students' three years of study, each running twice yearly for additional student or course flexibility, with Impact Labs 1 and 2 in the first year. Student numbers range from 350 to 800 per lab depending on student or course progressions. [Figure 2.2](#) summarises the overarching intentions of all Impact Labs, captured in the formal course documentation. Students' capabilities in transdisciplinary and collaborative idea generation and design, collaboration and partner engagement, reflection, and network and portfolio-building are gradually developed across the years. While each Impact Lab focuses on a different theme, they collectively adhere to the 'integrative learning' approach, where designerly conversations and ideation increase in complexity and level of expected rigour as students simultaneously grow in their disciplinary areas. Design problems span topics such as human-nature connection in sites, homelessness, drug and alcohol abuse, mental health and solutions for communal housing in slums. Students work in mixed-disciplinary groups to generate transdisciplinary design solutions. They bring not only disciplinary perspectives from their chosen design discipline (built progressively across their degree) and their own life views and experiences but also, for up to one-third of the cohort at any given time, knowledge and skills from one of twenty double degrees listed earlier. This intentionally develops a designer who from the outset moves more fluidly across disciplinary divides, as well as fostering the habits of doing so.

We recognise concerns that, in earlier years, students may not be fully ready for complex transdisciplinary experiences but note that delaying exposure to such

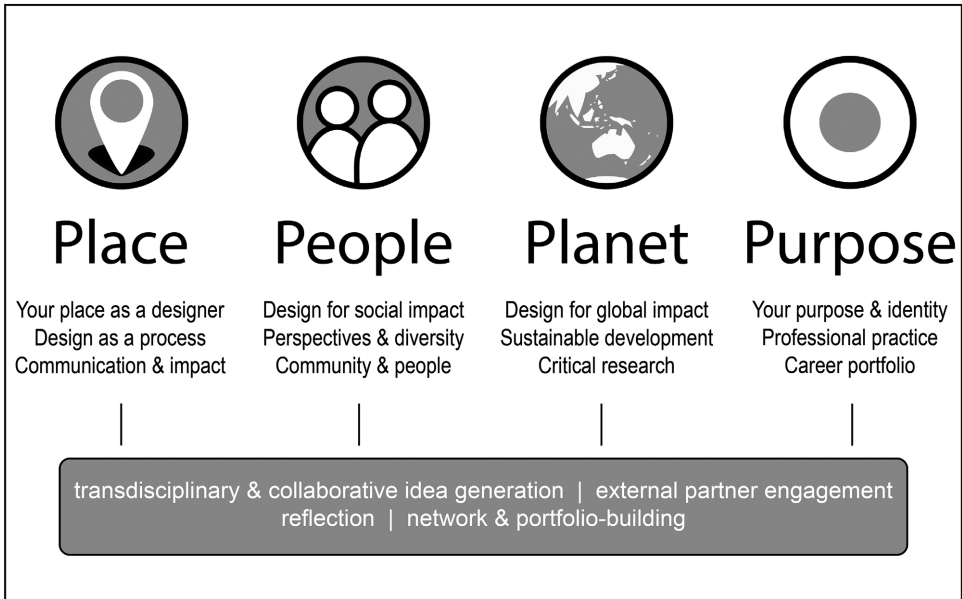


FIGURE 2.2: Summary of the suite of Impact Lab units and their key features (Logo design, Andrew Scott; from Brophy et al. 2023: 40).

activities also risks entrenchment in disciplinary silos, with lower receptiveness to the benefits in later years. The Impact Labs are therefore introduced from the first year and integrated across the degree, so students are able to form good habits of interacting across and beyond disciplinary boundaries. This also allows a gradual step-up or scaffolding in students’ development where, across the sequence, foundations laid are built upon in successive labs. As noted in the book’s introduction, while not always achieved due to the limitations highlighted, full-blown transdisciplinarity is always the aspiration here.

The Impact Lab model draws on experiences and learnings from precursor units discussed in Chapter 1 of this book. [Table 2.2](#) outlines the aims and intended learning outcomes for each lab. In general, each unit delivers a series of lectures and workshop-based activities coupled with periods of intensive design work driven by partner-generated design problems related to the themes at hand. Delivery models have varied since 2019 for reasons including the desire to offer more flexibility following student feedback, partner and site availabilities and project modes, and fully online instances due to Covid-19 disruptions to face-to-face learning and partner locations.

Moss et al. (2008) note the difficulties of assessing transdisciplinary learning because of restrictive, often subject-specific, standards-driven requirements as well

as the need for transdisciplinary spaces to create learning and assessments that ‘put the responsibility on students’ (Kaufman et al. 2008: 184–85). More broadly, Tannock (2017: 1345) argues for such assessment-free educational spaces that promote critical, reflexive, independent, and democratically minded thinkers and that simultaneously serve to address issues of equity and justice in education while offering emancipatory impacts.

Considering this, students are graded ‘Satisfactory’ or ‘Unsatisfactory’ in the Impact Labs to help facilitate risk-taking by students in their designs. This also provides heightened team-based opportunities for students to amplify transdisciplinary engagement without the fear of traditional scale-grading implications. The risk-free space allows for a focus on breadth, where the collective endeavour is inquiry and process-driven rather than content-driven and interpersonal interactions are fostered as a priority and bring space for students’ self-evaluation (Kaufman et al. 2008: 183–84). Assessments across the labs comprise aspects of self-reflection, peer, industry and academic evaluations of intent, process, collaborations, and design outcome, with specific components related to, for example, learning journal and self-evaluation (Impact Lab 1), portfolio and profile development (Impact Lab 2), research and analysis (Impact Lab 3), and a portfolio and impact statement (Impact Lab 4).

Concluding thoughts

Since the program’s inception in 2019, there has been a steady progression towards transdisciplinarity emerging as a field in itself, with the appointment of lecturers in transdisciplinary design and clearer leadership for the area, to bring this voice to the table alongside those of disciplinary areas. This ensures connectivity within and across all disciplines in the degree. In some ways, having designated disciplinary entry points to the degree through one of the seven different design disciplines may restrict a move to truer transdisciplinarity, with students identifying first with their discipline. It is also questionable, for reasons discussed across this chapter, whether this would be appropriate for students, particularly in an undergraduate space, when the gaining of foundational knowledge and skills in a disciplinary specialism is so critical.

We recognise that curricula should never be frozen in time but, rather, should live and be ever-responsive to future-focused needs, evolving as feedback is gathered. To endeavour to live up to our claim of ‘impactful curricula’, we aim to consider deeply the precise impact this new curriculum has on students’ knowledge, skills, capabilities, outlooks, personal and professional identities, and careers, as well as how these in turn might then impact wider society. Attached to the course,

TABLE 2.2: Aims and intended learning outcomes across the Impact Lab units.

Impact Lab unit aims	Learning outcomes
<p>Impact Lab 1: Place introduces design processes and practices for a future characterised by social agendas and environmental concerns. Students consider ways to conceptualise and negotiate how they might collectively address complex challenges demanding multifaceted solutions. The unit fosters consideration of students' designerly aspirations; the building of personal connections with peers; exposure to professional designers' identities through video interviews (Thomson and Scott 2021: 135); Indigenous Australian perspectives in design through overt connection to and consideration of 'Places' and contexts for design challenges.</p>	<ul style="list-style-type: none"> • Examine, illustrate, and reflect on the potential for design to bring about impactful change while identifying and working respectfully with the diverse perspectives that exist among participants and stakeholders. • Apply visual, oral, and written representation techniques for thinking and communicating ideas and knowledge. • Generate, propose, and develop ideas in response to a transdisciplinary design challenge using collaborative design methods, skills, and frameworks.
<p>Impact Lab 2: People explore the ways in which design approaches and tools can contribute to addressing complex social and community challenges for transformational change. Framed around real-world challenges, and in partnership with community and industry partners, students engage with design-led participatory strategies to address key social issues, such as homelessness, mental health support, education pathways following teenage pregnancy, and high-needs disability.</p>	<ul style="list-style-type: none"> • Understand and identify introductory design approaches and tools applied to complex social and community-based challenges. • Employ engagement strategies and cross-disciplinary collaborative design methods to sensitively explore community and/or social challenges. • Create a foundational career capabilities portfolio.
<p>Impact Lab 3: Planet uses design-led approaches to analyse, evaluate and deliver innovative and ethical responses or design propositions. Building on the skills and experiences gained in the first two labs, the unit introduces</p>	<ul style="list-style-type: none"> • Analyse and evaluate a range of complex global issues. • Combine collaborative transdisciplinary methods and discipline-specific skills to generate new ideas and project plans.

(Continued)

TABLE 2.2: Aims and intended learning outcomes across the Impact Lab units. (Continued)

Impact Lab unit aims	Learning outcomes
<p>a new scale of investigation through exploration of global imperatives to develop responses or design propositions that provide avenues for more sustainable and ethical behaviours or systems. Initiated through global industry partnerships, students address complex issues such as informal settlements, framed through the UN SDG (UN.org).</p>	<ul style="list-style-type: none"> • Define collaborative responses and/or propositions that demonstrate sensitivity to social, cultural, and environmental contexts and conditions. • Analyse and evaluate the design process, project experience, and challenge outcomes.
<p>Impact Lab 4: Purpose aims to consolidate students' individual sense of purpose and identity as a designer in relation to their desired career pathway and to translate this to a professional outcome and portfolio. Through individual and collaborative project opportunities with community and industry partners, the unit addresses professionalism in practice, research and evidence-based design practice, and entrepreneurship. In keeping with the course aspiration that at this level students should be given an opportunity to explore directions to suit their developmental needs, they also have the option to undertake a work placement unit instead.</p>	<ul style="list-style-type: none"> • Identify opportunities for career self-management and define career goals. • Investigate and enact strategies to undertake a design project. • Utilise advanced design approaches to deliver a design project. • Develop a professional design portfolio.

a program of longitudinal research seeks to answer some of these queries over a period of years. Early findings of impacts on students' learning and development are largely positive, though unsurprisingly also reveal the polarising nature of such learning approaches – for example, while many students are clear that they could not have secured access to a project or job, or undertaken a piece of design in a certain way, without their Impact Lab experiences, there are inevitably students (and staff) who remain clear that they wish to remain tightly within their disciplinary silo, seeing the labs as unnecessary. Early research findings may be seen in

Brophy et al. 2023 and Meth et al. 2023. Further research results will be presented in subsequent publications. As an early testament to the value of the ‘design for impact’ educational model, the course team was honoured to be awarded the 2021 QS Wharton Reimagine Education Award’s overall Global Education Award in London, UK. The case was assessed by a global panel of educational experts through a detailed evaluation of the pedagogic model, feedback from staff, students and partners, and esteem measures related to national and global design and higher education peers beyond QUT.

As noted at the opening of the chapter, transdisciplinarity remains a relatively ‘hard sell’ in learning and teaching and continues to be polarising, particularly when made a compulsory part of curricula, so it is vital that we are able to show an educational value to this curriculum. Ongoing discussions seek to refine and improve curriculum content and delivery models to ensure they continue to meet the needs of all stakeholders. And beyond the naturally evolving curriculum, institutional structures and leadership are also changing, with implications for the continued day-to-day course management and offering.

We see the Bachelor of Design degree and, in particular, the Impact Labs combining both transdisciplinary and impactful goals embodied in the school ethos and that of our university, where ‘awareness of subject is more deeply aligned with self-awareness, and self is connected outwards to awareness of others and the world’ (Booth et al. 2009: 930).

Design is an interdisciplinary profession serving multiple needs. Designers work in transdisciplinary teams whose nature and constituency changes according to the project at hand [...] When they graduate, they must know more than they once had to know to work at the upper levels of the profession, and they require a higher level of integrative skills to succeed.

(Friedman 2012: 143)

An educational agenda that effectively combines disciplinary with transdisciplinary in ‘impactful’ ways is likely to most successfully enable the development of such integrative skills.

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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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