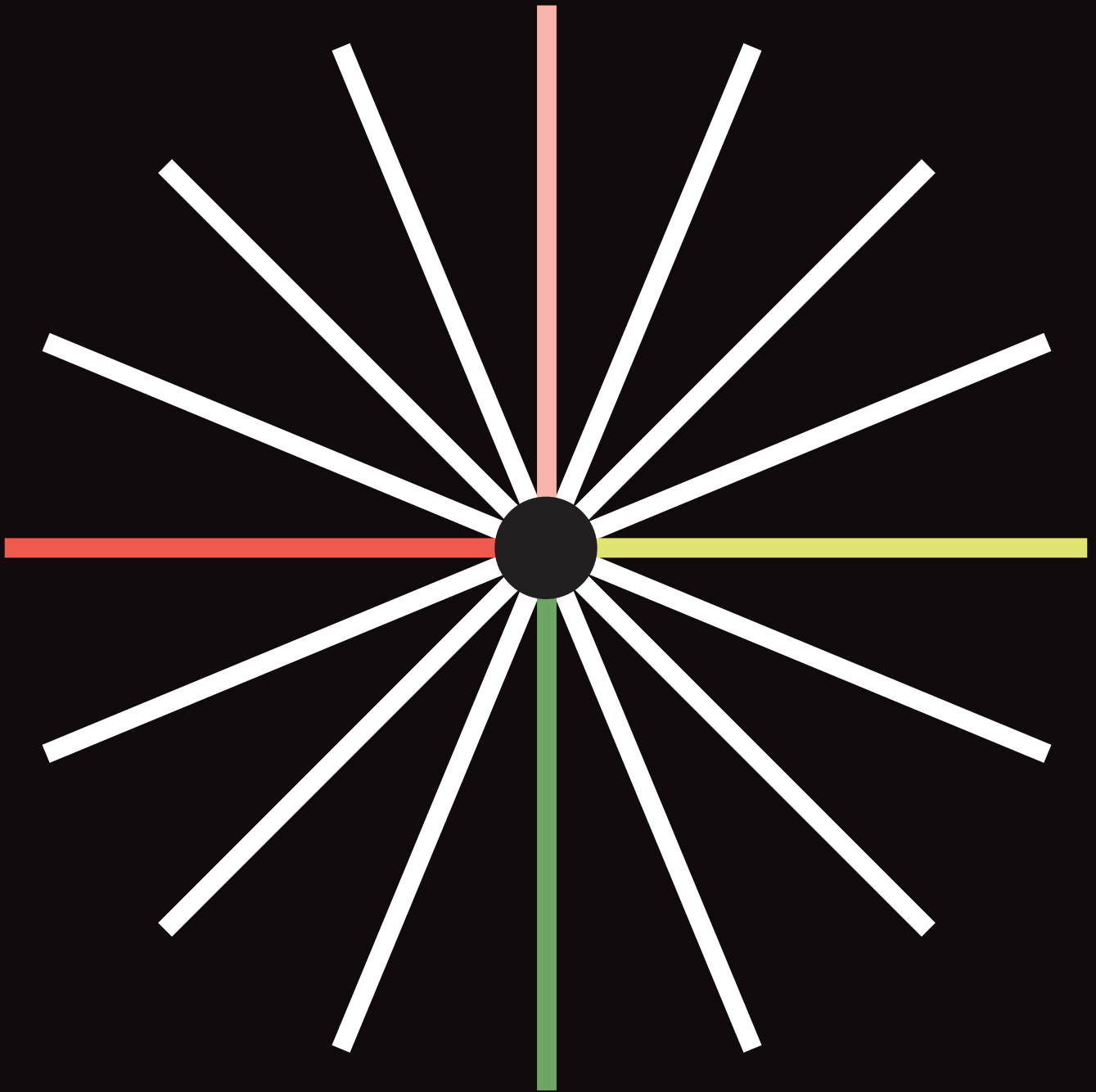


**The Future
Design School:**

**A Blueprint for
Reimagining
Design Education
in Singapore**



Copyright @ 2024
DesignSingapore Council
Economic Development Board

All Rights Reserved.

No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying, recording or by any information storage system and retrieval system, without the written permission of the copyright owner.

ISBN: 978-981-18-9937-9

Table of Contents

Foreword	5
Executive Summary	7
1. Beyond 2050: Reimagining Design Education in Singapore	10
2. Design Education Redesigned: Bringing Industry and Education Closer	20
3. A New Foundation: A Point-of-Vision for the Future of Design Education	34
4. Welcome to the Future Design School	64

Appendix

Lists of Abbreviations, Industry Associations and Institutes of Higher Learning	70
National agendas related to the Point-of-Vision	71
List of DEAC's public engagements	72

Acknowledgements	73
-------------------------	-----------

Foreword

When the Design Education Advisory Committee (DEAC) was launched in April 2020, the pandemic was just beginning and no one knew how it would unfold. It became a consequential moment globally, upending economies and societies in unimaginable ways. The committee published its first report after its first two-year term, just as the world emerged from the tumultuous period. We emphasised the urgent need to reimagine Singapore’s design education to secure its future in a rapidly changing and fluid world. This has only become more pressing since. The burning platforms of polarising geopolitics, global conflicts and sustainability challenges we identified shows no signs of abating and continue to stymie the recovery and reshape the global economy. The accelerating rise of new technologies such as generative artificial intelligence has opened up unimaginable possibilities but also called into question the future of work in a coming ‘new tech order’.

It has become clearer than ever to me the crucial role of design if we as humans are to remain central in this potentially globally transformative ‘intelligence revolution’. The creative skills and problem solving capabilities design offers are unquestionably essential for navigating the many complex and interconnected challenges the world faces today. This is why the DEAC was convened as part of a national masterplan to transform Singapore into an innovation-led economy and loveable city by 2025. Since 2015, the government has recognised the need to equip the nation’s workforce with design skills and the creative confidence to thrive in the future.

As the first-ever national platform for the different stakeholders of design education – educators, industry leaders and policymakers – the DEAC has worked hard to address this formidable task. Our first two-year term led to our Point-of-Vision to guide the transformation of Singapore’s design education system over the next 30 years. We also conceptualised 11 ideas for how the industry and design education can work closely as partnering-stakeholders. Finally, we committed to institutionalise our committee into the go-to-platform for thought and practice leadership on design education.

These three recommendations have been further developed and refined during our second term into this very guide that details how design education in Singapore must be redesigned to create the future design school. Just as how our pioneers built up a network of design schools over the last six decades to make Singapore into a City of Design today, we too must now lay even stronger foundations and chart bolder directions for our next generation of creative thinkers and problem solvers.

It has been my honour to chair the DEAC for a second term and be part of our country’s design journey into the future. Beyond simply capturing the completion of our incredible work, this publication aims to serve as a ‘strategic playbook’. We hope the DEAC’s key principles and ideas can serve as a blueprint to inspire and guide all stakeholders of design education in Singapore, and ultimately spark a nation-wide movement to transform our design industry and city for tomorrow.

Low Cheaw Hwei
DEAC Chairman
June 2024

Executive Summary

As Singapore transforms from an industrial economy towards one driven by innovation, our workforce must be ready to seize emerging opportunities and to tackle the complex and interconnected challenges that arise. Design can help our workers achieve both. It equips them with the much sought-after capabilities of creative problem solving and systems thinking. It also nurtures a sense of curiosity and encourages life-long learning. This is why design should be taught not just to designers, but everyone else too.

The Design Education Advisory Committee (DEAC) was appointed on 1 April 2020 by Singapore's Ministry of Trade and Industry and launched by the DesignSingapore Council. It brought together leaders from the Institutes of Higher Learning (IHLs), design and non-design sectors, as well as government policymakers into a tripartite alliance to shape the quality of design education and embed it into the nation's education system.

Over the last four years, the committee chaired by Mr Low Cheaw Hwei has focused on two critical tasks. One is to develop design talent with transdisciplinary skill sets. The other is to equip non-design professionals with design sensibilities. At the end of its first two-year term in 2022, the DEAC formulated a vision for design education in Singapore and put forth three recommendations to realise it, as outlined in Figure 1. During its second term, the DEAC expanded upon the three recommendations into a blueprint for reimagining design education in Singapore:

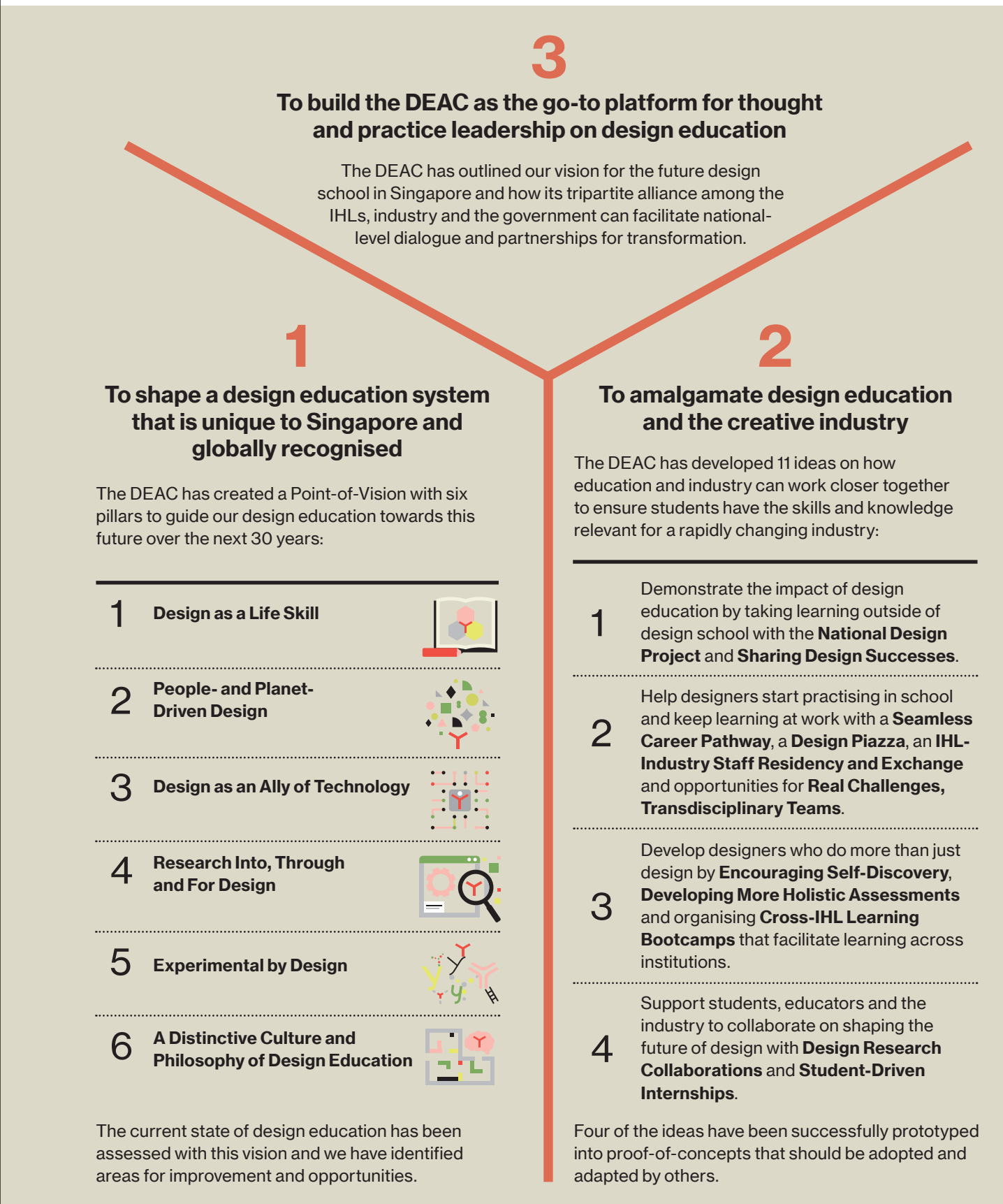
- > **A Point-of-Vision that lays out six pillars to develop a unique design education for Singapore that is globally recognised.**
- > **Successful proof-of-concepts on how education and industry can work closer together and the key principles that can be adopted.**
- > **An outline of what the future design school can look like and the role that the DEAC must continue to play as Singapore's go-to platform for thought and practice leadership on design education.**

These three recommendations by the DEAC form the foundations of a redesigned design education system for Singapore. They will ensure design education remains relevant to Singapore's workforce and society, and propels them towards a brighter future.

DEAC VISION

By 2050, Singapore will have developed the next generation of creative thinkers, problem solvers, and a global, resilient workforce that will use design to help the nation thrive in the future economy.

Figure 1: Overview of the DEAC's recommendations that were refined during its second term



Beyond 2050: Reimagining Design Education in Singapore

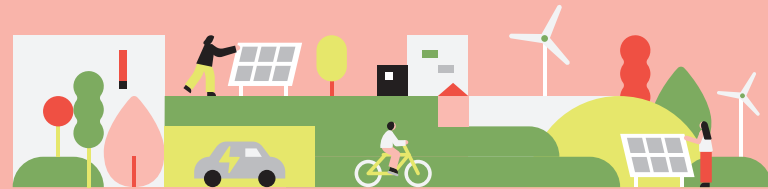
1



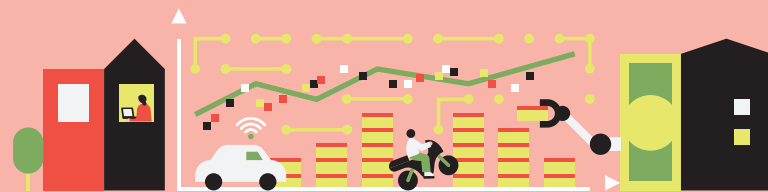
Then Prime Minister Lee Kuan Yew touring a vocational institute in 1965. Baharuddin Vocational Institute was the first to offer a design course in Singapore from 1968.

While Singapore embarked early on to train its own designers for an industrial economy, design education must now boldly evolve to support one led by innovation instead.

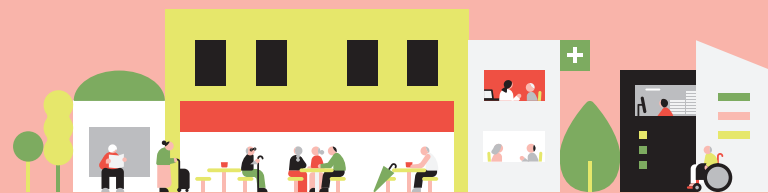
The world has undergone multiple disruptions in recent years. Geopolitical alliances have been realigned and impacted how economies and technologies work across the globe. A sense of insecurity pervades economies and societies, which has only heightened with the succession of shocks to the system, ranging from the pandemic to the outbreak of war and conflicts. Amidst this uncertain backdrop, countries have also been undergoing deep restructuring to address various burning platforms that are reshaping the world:



Cities are being reinforced and even redeveloped to become more sustainable and resilient to combat the impact of the climate crisis.



Economies are being disrupted and remodelled by the rise of automation and digital technologies such as artificial intelligence.



Societies are being reshaped by falling birth rates and ageing populations, both of which are straining resources such as manpower and healthcare.

Figure 2: Key burning platforms driving our changing world

To navigate these complex and interconnected challenges, we must all update our mindsets, skills and capabilities. Design offers a key to unlock them. It teaches the capabilities to be analytical and creative, which are the top two skills that the job market and society demand in the coming years, according to the World Economic Forum.¹ Design also draws out and nurtures our inherent human traits of having empathy for others, staying curious and being agile – all of which are much sought after too. Thus, it is beneficial not only for designers but the general workforce to possess abilities and experience in design.

¹ <https://www.weforum.org/agenda/2020/10/top-10-work-skills-of-tomorrow-how-long-it-takes-to-learn-them/>

Design in the Future Economy of Singapore

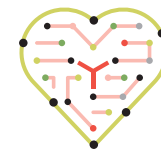
The leading designers of today have demonstrated how the profession is no longer just about giving form to printed matter, clothing, products, buildings and services. Design can also spur innovation, transform organisations and even speculate on new futures. According to the National Design & Industry Manpower Study 2021/2022, the 69,000-strong design workforce in Singapore is expected to grow by 25% from 2021 to 2030 to over 86,000 workers.² This growth will be driven particularly by employers seeking out designers in the following areas:

² <https://designsingapore.org/resources/national-design-industry-manpower-study-2021-2022/>



✦ Boosting Sustainable Innovation

Sustainability has become a global imperative and everyone, including designers, must gain knowledge and experience in this domain. By also developing capabilities in areas such as business strategy and stakeholder management, the design workforce can work with corporate executives and policymakers to define the new language for sustainability and seize the growing opportunities.



✦ Accelerating Digital Transformation

Digitalisation has brought forth a sea of opportunities for designers to support organisational transformation, draw up new business strategies and lead the development of new experiences and services. Designers must become better acquainted with the latest technologies and understand user needs to ensure the accelerating digital transformation is truly beneficial for humankind.



✦ Enhancing Creative Calibre

Southeast Asia is forecasted to become the fourth largest economy in the world by 2030. Designers need to become proficient in working within and for the region so they can tap into its rich and diverse socio-cultural, economic pool to generate creativity unique to the region and help Singapore become a global design powerhouse.

Figure 3: Drivers of growth for Singapore's design industry

Infusing Design Across Education in Singapore

As part of a larger effort since 2015 to strengthen the learning of design in higher education, the DEAC was appointed by the Ministry of Trade and Industry (MTI) and launched by the DesignSingapore Council (Dsg) on 1 April 2020 to strengthen links between IHLs and the industry.³ The DEAC rethinks how IHLs, industry and the government equip a workforce for the innovation economy where jobs are continuously transformed or invented to meet changing technologies and needs. Its tripartite alliance of 30 members brings together a more diverse group of stakeholders to better foster amalgamation between the education and industry, and collaborations with the government.

³ Refer to the reports of the Design 2025 Masterplan (<https://www.designsingapore.org/resources/design-2025.html>) and Design Education Review Committee (<https://www.designsingapore.org/resources/design-education-review-committee-report.html>).

⁴ Read the full report: <https://bit.ly/DEACReportT1>

⁵ See Appendix for full list of DEAC's public engagement activities

Landing the Vision

At the end of its first two-year term, the DEAC successfully launched its mid-term report, *Beyond 2050: Reimagining Design Education in Singapore*, that outlined three recommendations and 11 ideas for transforming design education in Singapore.⁴ They were shared with the Minister for Trade and Industry Mr Gan Kim Yong, and the Minister of State, Ministry of Culture, Community and Youth and Ministry of Trade and Industry, Ms Low Yen Ling, both of whom accepted and supported them.

During its second term, the DEAC welcomed several new members to inject fresh insights and energy to our proceedings. We engaged policymakers, the industry and public to advocate the importance of design education in the future because we needed all stakeholders on board to buy into our vision and drive it together. We also refined our recommendations and ideas from the first term.⁵

During our second term, the DEAC:

- Expanded the Point-of-Vision into a guide to direct the transformation of our design education over the next 30 years so that it is unique to Singapore and globally recognised.**
- Prototyped, refined and realised eight of our ideas to amalgamate design education and the creative industry into proof of concepts that are ready for others to adopt, adapt and develop new models of learning from.**
- Outlined our vision for the future design school in Singapore.**
- Explored how the DEAC can continue as the go-to platform for thought and practice leadership on design education.**

We believe that it is only by working with the different stakeholders over a sustained period to realise these recommendations – and updating them when new needs arise – that design education can bring the benefits of design to all levels of the workforce and society in Singapore. Each recommendation is elaborated in the following chapters, beginning with how we must redesign the teaching of design in Singapore.

Figure 4: DEAC Members in Term Two.

*Organisation and designation held during tenure in DEAC Term Two



Low Cheaw Hwei (Chairman)
Former Product and Spatial Design Practice Lead, Philips Global
Former Head of Philips Experience Design and Government and Public Affairs, Philips ASEAN Pacific



Alan Tay
Founder and Principal Architect
Formwerkz Architects



Jeff Cheong
Chief Executive Officer
DDB Group Singapore



Lee Tze Ming
Co-founder and Director
STUCK Design



Albert Lim
Director
School of Design and Media
Nanyang Polytechnic (NYP)



Ashraf Kassim
Associate Provost (Education)
Singapore University of Technology and Design (SUTD)



Ho Shen Yong
Executive Director
Institute for Pedagogical Innovation, Research & Excellence
Nanyang Technological University (NTU)



Nur Hidayah Abu Bakar
Dean
Faculty of Design
LASALLE College of the Arts



Tamas Makany
Associate Professor of Communication Management (Practice)
Lee Kong Chian School of Business, Singapore Management University (SMU)



Adrian Ong
Director
Jobs and Skills Division
Infocomm Media Development Authority (IMDA)



Bojan Blecic
Managing Director
Group Head, Customer Experience
Oversea-Chinese Banking Corporation



Crystal Chu
Creative Director
Kingsmen Exhibits



Ho Semun
Chief Executive Officer*
Singapore Fashion Council (SFC)



Hong Khai Seng
Founder and Director
Studio Dojo



Lynette Ong
Chief Operating Officer
Tan Tock Seng Hospital (TTSH)



Pann Lim
Co-founder and Creative Director
Kinetic Singapore



Seah Chee Huang
Chief Executive Officer and Architect
DP Architects



Agnes Xue
Associate Professor
Chair, Applied Research
Business, Communication and Design
Singapore Institute of Technology (SIT)



Callistus Chong
Senior Director
School of Design and Media
Institute of Technical Education (ITE) College Central



Cheah Kok Ming
Associate Professor (Educator Track)
Assistant Dean
College of Design and Engineering
National University of Singapore (NUS)



Emida Natalaray
Director
School of Technology for the Arts
Republic Polytechnic (RP)



Elaine Ho
Director
School of Design
Temasek Polytechnic (TP)



Pang-Eng Peck Hong
Director
School of Design and Environment
Director
The Sandbox
Ngee Ann Polytechnic (NP)



Peter Chuah
Head, Experience Design programme
School of Business
Singapore University of Social Sciences (SUSS)



Sabrina Long
Dean
School of Art and Design
Nanyang Academy of Fine Arts (NAFA)



Tan Yen Yen
Director
Media, Arts and Design School
Senior Director
Business and Creative Cluster
Singapore Polytechnic (SP)



Gillian Woo
Director
Creative and Professional Services Division
Workforce Singapore (WSG)



Li Jingheng
Director*
Workforce Strategy and Policy Department
Ministry of Manpower (MOM)



May Tan
Director
Education and Development
National Arts Council (NAC)



Tracy Lee
Director*
Industry Development Division 2
SkillsFuture Singapore (SSG)

Design Education Redesigned: Bringing Industry and Education Closer

2

From providing water through water wagons to building the Marina Barrage to create a new reservoir, solving Singapore's water problem required understanding people's needs and imagination on an infrastructure-system scale. There will be more of such complex problems in the world to solve in the coming future.



Water was once supplied to rural areas using water wagons, 1959.

The traditional model of design education – where future practitioners spend a set number of years to learn essential skills required by the industry – is no longer sufficient. The innovation economy has greatly expanded the role of designers. Future design roles are also no longer easily defined, and many require skills upgrading just a few years after graduation to keep pace with evolving business demands and rapid technological shifts. In short, those trained in design today may find themselves unprepared for tomorrow.

The DEAC believes the best way to address this is through the amalgamation of design education and the industry. During our first term, we employed the

design thinking process to reframe this challenge into four problem statements and came up with 11 ideas for strengthening links between education and the industry. Eight of them were prototyped and tested during the second term by DEAC members and Dsg. A total of over 3,100 hours and more than S\$1,000,000 were invested into their development.

By the end of our term, four prototypes were successfully turned into proof-of-concepts. The DEAC believes each offers a fresh solution for tackling the problem statements we have identified as the core challenges for the redesign of design education in Singapore.

+ Problem Statement #1

How might we develop designers who do more than just design?

As design expands across domains and disciplines, designers must be capable of honing their skills and knowledge in new areas beyond just the space of design. IHLs should focus on nurturing design students motivated to learn and explore new things independently. They can do so by helping design students discover their interests and strengths early on, so they will be motivated to apply the skills and knowledge they learn in more meaningful ways.

“After attending the Design Leadership Challenge, I managed to apply sketching as a form of ideation in my works to better help visualise my projects! I was also able to use tools like user journey mapping and persona making to make understanding my user needs an easier process.”

—Student participant of the 2022 challenge



Students during the 2022 challenge
Source: THE FAT FARMER



Model of 'Cargo @ SCAPE'.
Source: CROSS-IHL BOOTCAMP
PROTOTYPE TEAM

× Prototype

Cross-IHL Learning Bootcamp

Learning beyond the formal curriculum and across institutions

In a pioneering partnership, four IHLs joined forces to organise this cross-disciplinary learning initiative for students. The inaugural Design Leadership Challenge in June 2022 was a five-day immersive bootcamp for students and staff from the Nanyang Academy of Fine Arts, Ngee Ann Polytechnic, Singapore Polytechnic and Temasek Polytechnic to develop entrepreneurial ideas addressing health and wellness for youths.

Unlike typical hackathons, this one organised in partnership with strategic design consultancy Ideatico and *SCAPE, a non-profit organisation that supports youth talent and leadership development, offered a more holistic and comprehensive experience. The 55 student participants, including non-design ones, worked in cross-institution teams, and were mentored by industry partners.

A second challenge held in September 2023 attracted double the number of IHLs and a total of 71 participants. They tackled a challenge sponsored by the National Youth Council's Somerset Belt Office to reimagine its skate park, youth park and *SCAPE. The most creative pitch was awarded to Cargo @ SCAPE, which reuses cargo containers to create an open-concept social hub. In the day, the space could be a cafe for young adults and parents with children to hangout. By night, it becomes a safe space for youths to unwind and express themselves through outdoor performances. This idea and others were submitted to *SCAPE for consideration.

Key principles:

- + Incorporate experiential learning opportunities to help students develop soft skills such as communication and negotiation with peers, and become more holistic designers.
- + Collaborate with organisations for students to work on real-world projects and experience learning across disciplines beyond design.
- + Work across IHLs to share learning and teaching resources and to encourage a cross-pollination of ideas between staff and students.

+ Problem Statement #2

How might we demonstrate the impact of design education?

Design education not only equips students with design skills and knowledge, but it also imparts capabilities and mindsets such as problem solving and critical thinking and nurtures a human-centred approach to issues. Many, however, still regard design as simply a tool for shaping aesthetics. A greater effort is needed to showcase the wide-ranging impact of design to encourage more to attain an education in design.

“I enjoyed thinking out of the box and trying unusual ways to solve a problem. I love how such conversations inspire me to think creatively and push me to go further.”

—Amelia Gaw Oon Leng
Student, Ai Tong School

“This experience showed my students the power of thoughtful design and inspired them to value empathy, innovation, and teamwork. It is more than a project; it’s a life lesson shaping their skills for the future.”

—Ms Cheryl Teo
Assistant Year Head (Lower Primary) and Applied Learning Programme
Westwood Primary School



St. Anthony's Primary School students explaining their project to Education Minister Chan Chun Sing during the Design Education Summit.
Source: ALL THE LITTLE THINGS PHOTOGRAPHY

× Prototype

National Design Project

Taking design education outside of design school and to the next generation

Over 220 students from 32 primary, secondary and pre-university institutions participated in this first-ever national initiative to showcase how design can help tackle everyday as well as complex issues faced in the country. The event organised by Temasek Polytechnic saw teams of students trained in design thinking and being mentored by industry partners to tackle a wellness issue Singapore is facing.

The 50 projects included a standout entry by Ai Tong School sought to motivate primary school students to eat more healthily in the school canteen. The students developed a system that included visual cues for healthier selections, points and rewards for those who picked nutritious options and even personalised diet reports provided via a Health-e-Buddy Kiosk. This was among the 21 projects exhibited during the Design Education Summit 2023, where the teams had an opportunity to present their designs to the guest-of-honour, the Minister of Education Chan Chun Sing.

While the challenge has officially ended, some of the teams have continued developing their projects with the help of Temasek Polytechnic. One example is the team from St Joseph's Institution who are designing a community centre for seniors to combat social isolation by helping them stay active as a community. There are also plans to organise a second edition of the event in 2025 to commemorate Singapore's 60th National Day and eventually, an annual National Design Project!

Key principles:

- + Offer students more opportunities to learn and practice design outside of existing formal programmes such as the Design and Technology classes in secondary schools.
- + Develop more platforms to bring students across different levels together to learn and experience design with the guidance of design practitioners.
- + Encourage more to pick up creative problem solving and design skills from a young age by getting them away from textbooks and to work with their hands instead, and evoking curiosity in them – planting the seeds of future design leaders, stewards and patrons.

+ Problem Statement #3

How might designers start practising in school and keep learning at work?

Design education today is largely confined within the IHLs. Creating more opportunities to blend education and industry work will help design students understand the relevance of what they are taught. It can help the faculty continue developing professionally through interactions with industry practitioners too. Finally, the industry will find graduates more prepared for the working environment.

“The internship has been a learning experience of what an advertising agency can offer. The fast-paced work culture has made me realise the importance of open communication.”

—Sophie Marett
Student participant in the first run

“My time at Tribal DDB has greatly sharpened both my conceptual thinking and technical skills. Working alongside creative mentors across various client accounts and roles gained me invaluable insights and clearer direction for my future career. Overall, this experience has been incredibly rewarding, building my confidence for the professional world.”

—Ivania Low
Student participant in second run



NYP students working with Tribal on a TikTok challenge for the 2022 National Day Parade. Source: NYP

× Prototype

Seamless Career Pathway

Helping students get to work while still in school

To better enhance job-readiness of its students upon graduation, Nanyang Polytechnic (NYP) partnered with an advertising agency to host a first of its kind paid work-study arrangement for its final-year students. Instead of a typical four to six months internship, participants from the polytechnic’s visual communications and motion graphics programmes worked at DDB Tribal Worldwide Singapore (Tribal) for an entire year. They were mentored by seasoned designers in the company through their final-year project and at work while also attending classes in the polytechnic.

Over two runs of the programme in 2022 and 2023, six students selected from a rigorous screening process immersed in agency life and gained hands-on experience. They contributed to agency pitches and development work for various clients in the aviation, banking and energy sector. The students were also involved in a range of projects, including creating a Tiktok challenge for the 2022 National Day Parade where the public was invited to piece together a ‘jumbled up’ command by the parade commander.

As students learned creative processes, project management and client pitching in a real-world setting, it accelerated personal growth and even led to job offers for some. The experience also gave students clarity on career choices.

The positive feedback from both participants and Tribal has spurred NYP to continue the programme and develop similar arrangements with more companies.

Key principles:

- + Ease the barriers between the school and the work environment to help students advance into the industry by learning on the job and picking up the soft skills necessary for working.
- + Expose students to the different roles in the industry earlier so they have a clearer idea of their career prospects and how to get there.
- + Transform the traditional milestone and order of graduating from school to graduating into a company to better motivate students to learn and encourage companies to have greater influence in shaping the student.

+ Problem Statement #4

How might students, educators and the industry collaborate on shaping the future of design?

The traditional model of students relying on educators as the single source of knowledge to prepare them for the industry must evolve. Instead of relying on prescriptive and standardised teaching methods, educators must be engaged with the practice of design to offer students relevant experiences from the industry too. As part of this new collaborative learning model, the industry can partner IHLs to spur innovation in their respective fields and students can take on a larger role in shaping their own design education.

“Design will lead the development of emerging technologies into meaningful and sustainable directions because design catalyses collaborations of multiple stakeholders, bridging technology development, business models and human needs. For doing that, we need to create strong networks of research institutes, government and industry.”

—Dr Jung-Joo Lee
Division of Industrial Design
National University of Singapore

Watch her full presentation and others:



A panel featuring members from the industry (L-R) Keith Wong (Chemistry), Alex Lim (Activation Group and Ho Weihao (Tria). Source: AUGUSTINE LAU

× Prototype

Design Research Collaborations

Researching design together

Design researchers across Singapore got an opportunity for the first time to connect and learn about each other's work at the inaugural IMPACT 2023 x Design Research Forum held on 26 September 2023. Some 80 participants from various IHLs and the industry attended this day-long event that was organised by the Nanyang Technological University to raise awareness and encourage more design research.

A total of 17 speakers across 13 design institutions spoke at the National Design Centre on topics across four themes, including “Innovation, sustainability and entrepreneurship”, “Culture, society and environment”, “Wellbeing and healthcare” as well as “Future generations”. Their presentations were rooted in real-life design research experiences, including Dr Jung-Joo Lee on how her team at the National University of Singapore's Division of Industrial Design facilitated a cross-disciplinary consortium to research and design future mobility infrastructures for autonomous vehicle operations. In addition, a panel discussion was organised with industry members to help educators better understand how design research can be used in practice.

There are plans to turn the forum into a cross-IHL design research community and to collect the proceedings into a platform for others to learn more about the impact of design research.

Key principles:

- + Create more opportunities to showcase the impact of design research on business, education and society.
- + Build more platforms for design researchers to exchange knowledge on design research methodologies, to grow research capabilities and to collaborate with students, academia, other research entities and the industry.
- + Support designers to identify research topics and resource support that can help develop ownable design knowledge through research as a major knowledge-generating pillar in the industry.

A New Vision for Design Education

Our four prototypes demonstrate new models of learning and teaching that will transform design education in Singapore. Having developed each into successful proof-of-concepts, some have been adopted into the education programmes of prototype owners. We believe more should take them on, improve them and scale them up where possible. Each prototype also offers key principles for stakeholders to learn from and develop their own solutions in their journey of redesigning design education.

Even as we refresh the practice of design education, it is essential to rethink what the system must achieve to remain relevant into the future. In the following chapter, we outline the DEAC's Point-of-Vision and how it offers a new foundation for the future of design education in Singapore.

New Foundations: A Point-of-Vision for the Future of Design Education

3

Constraints and play inspire resourcefulness and fosters creativity. Singapore must encourage to retain this behaviour and embrace this mentality as we continue to grow and develop as a nation.



Children playing hopscotch on a self-drawn court along a five-foot way, 1960s.

Urban Redevelopment Authority Collection,
courtesy of National Archives of Singapore

As Singapore transforms from an industrial economy towards an innovation economy, our design education system must take a new shape to equip our workforce with key skills and capabilities for the future. The Point-of-Vision restructures design education in Singapore around six pillars that support various national agendas to address the burning platforms we face, and will help create a unique education system that is globally recognised.

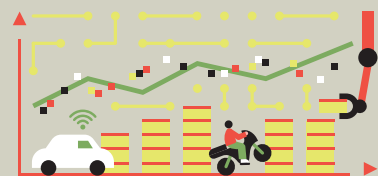
A Partner for the Future

As Singapore transforms for the future, the Point-of-Vision ensures design continues playing a key role in supporting various national agendas that address burning platforms we face today:

Burning platforms



Cities are being reinforced and even redeveloped to become more sustainable and resilient to combat the impact of the climate crisis.



Economies are being disrupted and remodelled by the rise of automation and digital technologies such as artificial intelligence.



Societies are being reshaped by falling birth rates and an ageing population that are straining resources such as manpower and healthcare.

National agendas⁶

21st Century Competencies

A suite of core values and competencies to help Singapore students thrive in this fast-changing world.

Long-Term Plan Review

A guide for the development of Singapore, mapping out strategic land uses and infrastructure needs over the next 50 years and beyond.

Singapore Economy 2030

A guide to chart the country's next lap of growth through the four key pillars of Trade, Enterprise, Manufacturing and Services.

Singapore Green Plan 2030

A whole-of-nation movement to advance Singapore's national agenda on sustainable development.

Smart Nation

A digital-first Singapore that harnesses technology to effect transformation in health, transport, urban living, government services and businesses.

⁶ See Appendix for more information about each national initiative.

Point-of-Vision

The following six distinct and interconnected pillars will guide IHLs in their continual pursuit of relevance and transform Singapore's design education into a distinctive global brand.

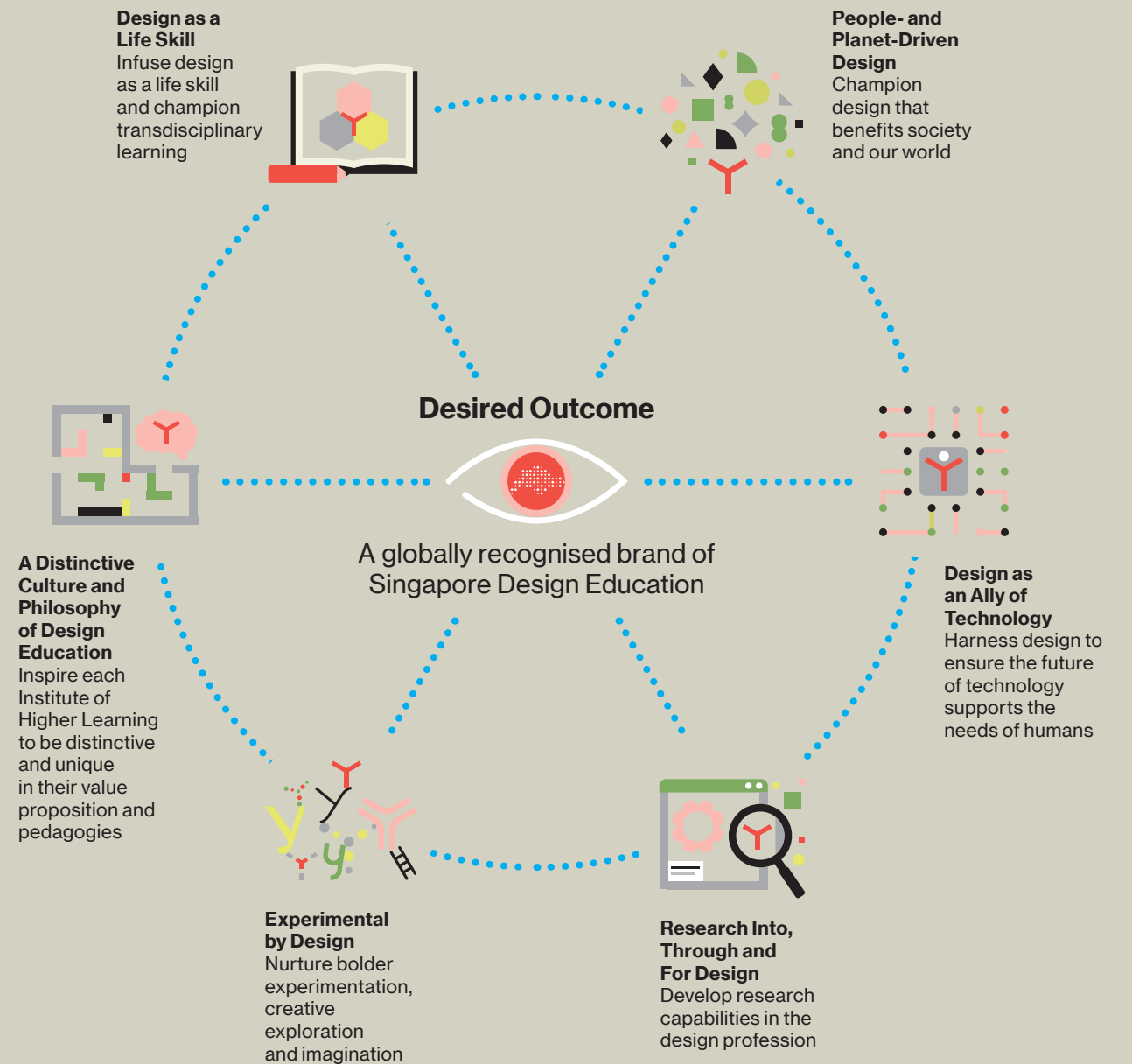


Figure 5: The Point-of-Vision complements national agendas for the future development of Singapore and addresses various burning platforms we face.

Pillars of Tomorrow

The Point-of-Vision consists of six distinct and interconnected pillars to transform design education in Singapore. Each builds up a set of capabilities drivers and content direction the DEAC believes is essential for design education to shape the workforce of tomorrow. The following pages explain the significance of each pillar, how to realise it and what success looks like for future practitioners. In addition, existing programmes by IHLs have been reviewed against each pillar to assess the gaps and opportunities.

Design as a Life Skill

Infuse design as a life skill and champion transdisciplinary learning



Why is this important?

Design is not simply a profession but an innate capability to creatively solve problems. It is why everyone should acquire the foundations for design, such as skills in creative problem solving. Learning design also complements the Ministry of Education's (MOE) suite of 21st Century Competencies in general education, in particular "Critical, Adaptive and Inventive Thinking" – and we would add to it, 'doing' – so that students can confidently navigate and thrive in our complex world that is rapidly changing. The design process nurtures empathy in students by teaching them to understand challenges from the perspective of others and embracing uncertainty when creating something new. They are also introduced to a transdisciplinary approach as they engage different disciplines to synthesise knowledge and make meaning. By applying this co-creation process to real world projects, students see for themselves how design can improve lives and make a positive impact on society too.

How to achieve this?

For design to become a life skill, the popular perception that the profession is merely focused on aesthetics must be broadened. At its core, design is an empathetic and humanistic creative process for solving problems that everyone – both designers and non-designers – should appreciate. This requires the introduction of design to the general education system, just like skills such as numeracy, literacy and communication. In this way, students discover early on the multifaceted potential of design and how to apply it in their everyday lives.

What does success look like?

- ✦ All students – regardless of they are studying design or not – appreciate design and have the creative confidence and sensitivity to challenge, question and not accept answers from the book.
- ✦ All students can use design skills to complement their chosen fields of profession.
- ✦ All students can use design skills to not just solve problems but discover opportunities, be it in the economy, society and everyday life.

What are IHLs doing to support this?

Design literacy for all

by Ngee Ann Polytechnic

The Human-Centred Design Institute (HCDI) was launched in October 2022 to raise design literacy across the polytechnic and Singapore. It has since certified over 200 staff, ranging from employees in human resources to organisational development, empowering them to integrate design in their work. The institute has also worked closely with academic schools to infuse design into the curriculum for non-design students. For instance, design is part of the mandatory curriculum for first-year students from the polytechnic's interdisciplinary studies and engineering schools, which has a combined average annual cohort of 4,200 students. HCDI also works with academic schools to organise hackathons for students to learn by using design to address societal and industry challenges.

Over 1,200 employees across 30 local enterprises will be trained by HCDI in human-centred design from 2023 to 2025.

Laying a foundation in design thinking

by Singapore University of Social Sciences

All full-time undergraduates enrolled since July 2023 must take a compulsory semester-long course in design thinking. Students learn to consider scientific knowledge about humans, combined with contextual understanding of user activities and needs, when designing, prototyping and testing new or improved products or services. "NCO205 User Centred Design: Human Factors and Design Thinking" is part of a series of core courses in the university to help students appreciate complex issues in local and global contexts and to enhance their understanding of individuals, communities, and relationships. It empowers them to contribute meaningfully to society through interdisciplinary approaches and experiential learning.

Over 500 full-time and 300 part-time undergraduates are expected to participate in this course every semester.

Designing across borders

by Nanyang Polytechnic

Since 2016, the polytechnic's School of Design & Media (SDM) and the School of Health Sciences (HS) have conducted annual design workshops with institutes of higher learning from Australia. Students are tasked to tackle shared healthcare challenges faced in Singapore and Australia, such as an ageing population, financing a universal healthcare system and meeting infrastructure needs. The 2023 edition involved 54 Singapore students working with 50 counterparts from Queensland University of Technology, Monash University, University of Canberra and Federation University. The students worked across cultures and disciplines to co-create prototypes which were presented at a one-day symposium and exhibition at the National Design Centre.

"I thoroughly enjoyed the Design for Change Workshop with the Australian students as it provided me with a deeper understanding of design and expanded my perspectives."

Fidelia Wibowo, SDM student

Breaking down silos between disciplines and more

by Nanyang Technological University

Faculty from the School of Material Science Engineering (MSE) and the Art, Design and Media (ADM) have co-taught a design module since 2020. Each cohort involves 40 students across the two schools learning design thinking approaches and applying them to real-life problems faced by community partners. For example, students worked with Ground-Up Initiative to tackle a mosquito problem in their community grounds. One group used oranges and wood available onsite to develop a natural mosquito repellent and vessel that is designed as an activity for visitors too. Over 150 students have benefitted from this course, which is now open to the university's other schools.

"Solutions borne out of the combined approaches and thinking processes of engineers, scientists and artists, designers are very refreshing and enlightening in many aspects. We hope with our course, students can break out from their fixed ways of thinking and be more encompassing and meaningful in their creativity."

Associate Professor Tan Lay Poh, MSE

What more can be done?

The sheer number of programmes teaching design to non-designers demonstrate a growing belief in the importance of design as a life skill for all. It is crucial, however, to broaden the curriculum from simply teaching students an approach like design thinking to cultivating creative problem solving in them. Design education should also not be confined to extra-curricular programmes or singular modules. Instead, it must be taught as a core subject and practice that offer an enabling approach across the curriculum. We must also increase the opportunities to learn design as a life skill in the general education system to nurture the capability from a young age. One example is the Learning by Design initiative by Dsg and in partnership with MOE that works with schools and industry partners to expose students, educators and parents to design thinking.⁷

⁷ <https://designsingapore.org/initiatives/learning-by-design/>

People- and Planet-Driven Design

Champion design that benefits society and our world

Why is this important?

Be it fighting for social equity or addressing climate change, these sustainable development goals are high on the agenda of governments, businesses and society today. They recognise that the scale of these challenges requires different stakeholders working together to address them systematically. The Singapore Green Plan 2030, for instance, involves multiple government agencies and citizens in a whole-of-nation movement to advance the country's national agenda on sustainable development.

Design is uniquely placed to facilitate and synthesise this as it typically works with different disciplines, fuzzy parameters, abstract stakes and adopts a human-centric approach. Its role as an integrator helps generate holistic and creative solutions to tackle wicked problems and manage the unknown (i.e. change management). As design is all around us and its impact is felt everywhere, it presents an opportunity – and a responsibility – for designers to champion the needs of people, including our planet.

How to achieve this?

This requires a shift in perspective from “ego” to “eco”. Designers, clients and everyone involved in the design process must look beyond the individual short-term benefits and prioritise the longer-term sustainability, even regeneration, of our planet. Designers, in particular, need a holistic understanding of the impact of their work. They must understand what they do in longer-term horizons beyond the typical 5-, 10- or 20-year plans. How might design serve not just the needs of current users but future generations too? How will a design impact and even shape the next 100 years and beyond? How can design articulate complex and abstract concepts to different stakeholders? Such



long-term planning and sustainable development are not new to Singapore. Our successful transformation from a Garden City to a “City in Nature” is a strong example of the kind of long-term thinking and skills to articulate the solution-vision that we need to provide. They serve as a solid foundation to build into a unique pillar of our design education system.

What does success look like?

- ✦ Students can identify, articulate and tackle the needs of the diverse stakeholders involved in the creation of any design and play the role of integrating their different concerns at a systemic level.
- ✦ Students can assess how design is shaped by – and shapes – contexts and systems, be it communities, society, and even the planet.
- ✦ Students are proficient in the business and science of sustainability and care so they can make a greater impact in their work.
- ✦ Students can critically assess and address the impact of a design across different scales, from the lifecycle of a product, service or operating model to its longer-term afterlife on the societal and planetary level.

What are IHLs doing to support this?

Giving back by design

by Temasek Polytechnic

The polytechnic organises various “off-curriculum” projects to help students give back to the community while building their portfolio. The annual Shaping Hearts 2023 organised by the North East Community Development Council, for instance, saw student ambassadors highlight the artistic talents of the special needs community. They designed a series of art-inspired activities for the public to experience the struggles faced by the community. These were informed by visits to beneficiaries such as the Cerebral Palsy Alliance Singapore (CPAS), Movement for the Intellectually Disabled of Singapore (MIDS), The Rainbow Centre, and the Singapore Association for Mental Health (SAHM) Wellness Centre. Following the success of the festival, the polytechnic is returning to support the 2024 edition.

“It is both an honour and a privilege to host the Student Ambassadors. They have shown remarkable kindness, consideration, and warmth towards our apprentices.”

Spokesperson from The Rainbow Centre

Exposing students to design’s role in society

by LASALLE College of the Arts

To provide students a holistic understanding of design, the college’s curriculum balances between practice and theory. Its first- and second-year students must enrol in a compulsory Contextual Studies module that culminates in writing a dissertation in their third and final year. The modules progressively introduce students to various academic readings that explore the role of design in society. They are also provided research tracks to explore, such as future identities, heritage and luxury, climate and ecology, design experiences and futures, as well as media and technology.

Examples of references students read include *Discovering Design: Explorations in Design Studies* (1995), *Design as Future-Making* (2014) and *Design for Social Innovation* (2022).

A holistic education in sustainability

by Singapore University of
Technology and Design

A new interdisciplinary minor was launched in March 2023 to equip undergraduates with knowledge and tools on sustainability and design, and to broaden their views on its various environmental, social and economic aspects. Some 21 students have signed up for the inaugural edition of the “Sustainability and Design” minor where they will work on two group projects. The first involves investigating user needs and the environmental impact of a household product and redesigning it through the Life Cycle Assessment methodology, which considers all stages of its production, distribution and disposal. In the second project, students investigate energy usage and waste management in a community through data analysis and people- and-planet driven design.

“Sustainability is a collective endeavour. Through the use of design thinking frameworks and tools, students get to incorporate sustainable considerations when creating and designing products, services and technologies. This course empowers students to make informed decisions and drive positive change towards designing for sustainability.”

Dr Tan Mei Xuan, Senior Lecturer

Building with communities

by Ngee Ann Polytechnic

The Community Design-Build Studio bridges theory and practice by offering its architectural students an immersive learning experience in meeting the needs of a real-life community. As they prototype, design and build physical structures or products with diverse stakeholders, students gain hands-on experience and learn to engage and empathise with communities in a responsible manner. Since the studio’s inception in 2014, over 200 students have worked with 20 communities in Singapore and Indonesia.

“I have definitely grown a deeper understanding of what humanitarian design and participatory design are and I’ve come to realise how important it is to create a building or space that meets the needs of the community...”

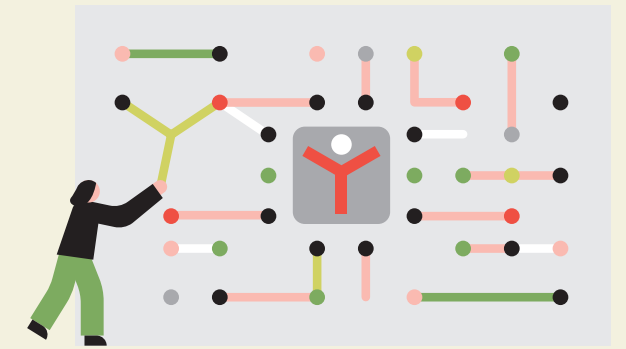
Jodie Teresa Monteiro, student participant and now co-founder of Ferticlay, a creator of waste-based clay products.

What more can be done?

Sustainability, care and inclusion are increasingly popular topics in school. However, many tackle them in one-off 'distant' projects instead of addressing them in a sustained manner in their design practice. IHLs must change this by adopting a more transdisciplinary approach in teaching and helping students learn about the business models, societal trends and even the science behind these issues. It will help them gain a systemic understanding in order to make a more meaningful and lasting impact. The assessment of student works should go beyond traditional concerns of form and function to also include their impact on people and the planet, while students should also be exposed to working with government institutions, public agencies, non-profit organisations to broaden their experience of design with public organisations. This will encourage them to recognise they are the proponent and custodians of people- and planet-centric creative problem solving.

Design as an Ally of Technology

Harness design to ensure the future of technology supports the needs of humans



Why is this important?

Digitalisation and emerging technologies such as artificial intelligence have disrupted economies and societies around the world. It is also transforming the practice of design, with some even fearing the displacement of roles and disciplines altogether. New technologies will no doubt change our lives and even the way we design, but it will also bring about unimaginable opportunities. This is why Singapore has set out to become a Smart Nation, where the government, economy and society harnesses technology to effect transformation in health, transport, urban living, government services and businesses.

Design and technology have a symbiotic relationship. While the latter enables transformations, design empowers the proliferation of technology through humanising it. This manifests as accessible user interfaces, engaging user experiences and understanding user and human-behaviour in the face of technology. The design process also helps to surface the many ethical issues and societal challenges that technologies may bring about. The alliance of design and technology can bring about many benefits for humankind.

How to achieve this?

Designers need to supplement their professional fundamentals such as craft and a user-centric approach with a solid understanding of current and emerging technologies. This combination will empower them to apply technologies in their designs. More importantly, it can also help them identify and navigate the potential and pitfalls of technologies and safeguard the wellbeing of humans. We expect design schools to work

closely with technology schools to form an alliance whereby technology is no longer tackled independently without the consideration of human behaviour and user needs. As technologies evolve rapidly, designers must also be nimble and adaptable to ensure the needs of humans remain at the core of our increasingly tech-driven world. This is especially so in the acceleration of ubiquitous and pervasive disruptive technologies.

What does success look like?

- ✦ Students can understand the workings of different technologies and purposefully apply them on their designs centred around user needs, behaviour and experience flow.
- ✦ Students can critically assess the potential and pitfalls of different technologies, the implications for design as well as articulate and express technology for meaningful user interaction.
- ✦ Students can leverage, improve on and even subvert different technologies to create novel designs that benefit humans.

What are IHLs doing to support this?

Where design meets AI

by Temasek Polytechnic

In 2024, the polytechnic set up the Interactive Digital Experiments with AI Studio (IDEAS) where students can explore the intersection of design and technology. They can access generative AI software, including those from industry giant Adobe and local studio STUCK Design's newly developed Hypersketch. The studio is open to the polytechnic's design students as well as design professionals and secondary school students. IDEAS builds upon the polytechnic's efforts since 2023 to teach students to incorporate AI as part of their design process, from generating fashion runway looks to building metaverse environments.

“While debates on the use of AI continue all over the world today, Temasek Polytechnic’s School of Design believes that the use of generative AI will be an important design tool that will augment human creativity, not replace it. We believe in keeping our students up to date on the latest developments in the tech world and to embrace the concept of AI as an ally to design.”

Elaine Ho, Director, School of Design

Applying computation in design

by LASALLE College of the Arts

Throughout its three-year design communications degree programme, students are taught how to apply computation in their design practice. During the first year, they are introduced to creative coding and physical computing exercises to generate designs for print or interactive works. Students then embark on a “Data Spaces” project in their second year, where they collect and interpret data to generate aesthetic outputs. Such exposure to computation, which started in 2019, has encouraged students to apply it in their graduation projects. Examples include designing nature-inspired kinetic objects to enhance healing spaces and prototyping interactive devices and experiences that provoke thought and contribute to discourse.

“Computational design lends itself well to a dynamic and iterative design process, from making to evaluating, allowing us to always step back and critically examine our work... We didn’t just learn how to use and combine different technologies as a tool... but we also examined the role it plays in our current design context and how we experience the world around us.”

Aditi Neti, 2023 graduate

Learning design with help from AI

by Institute of Technical Education

As its first-year product design students come from diverse academic backgrounds, the institute has introduced the use of AI tools to scaffold their learning. Students are first introduced to the principles of writing prompts to communicate with such tools before participating in “AI jamming sessions” to collectively learn how to achieve desired results. They then use their newly acquired prompt skills to generate design proposals, which saves on time previously spent online searching for images. More importantly, it has helped students communicate their intent more clearly and professionally. Over 160 students have benefitted from this initiative launched in 2023.

“AI contributed to improving my design vocabulary and presentation by helping me to rephrase my initial thoughts that may not be well written. Overall, I feel that AI has been an asset in various aspects of the learning and creative process.”

Muhammad Asyraf Nasir, final-year student

Augmenting design with technology

by Singapore Polytechnic

Students in its Media, Arts & Design School learn to experiment with technologies in their creative outputs for all modules. Examples range from designing interactive hologram projections using motion capture for Halloween night at the Singapore Discovery Centre to using motion capture to study the techniques of Singapore badminton star Loh Kean Yew for a project with *The Straits Times*.

What more can be done?

It is encouraging to see the many programmes IHLs have organised to help students stay on top of the latest technologies, and even using it to enhance the teaching of design. The increase in exposure to technology is essential but we understand from feedback that design disciplines have traditionally attracted students who find science, engineering and mathematics challenging. How might we introduce such topics to design students in an engaging manner, so they are encouraged to not just use them but explore in-depth? It is key that designers do not simply know how to operate the latest technologies and are blindly led by them. They must also understand them well enough to apply them in their work and even experiment and innovate. Design schools should also more actively seek out symbiotic collaborations with technology schools.

⁸ <https://designsingapore.org/initiatives/good-design-research/>

Research Into, Through and For Design

Develop research capabilities in the design profession



Why is this important?

A key pillar for Singapore's future economic growth is a vibrant ecosystem of local enterprises that are future-ready and possess deep capabilities to compete globally. Such a knowledge-intensive, innovation and entrepreneurial economy necessitates the robust growth and development of intellectual capital locally. The government has championed this in various ways. One example is the National Research Foundation that develops policies and funds initiatives to build research and development capabilities in Singapore.

As more design students and academics generate distinctive insights and knowledge that are applicable to industry and society, the value of the profession will become clearer to business owners, policymakers and other professionals. Initiatives such as Dsg's Good Design Research programme which supports projects that seek to make an impact on people, planet and profit will encourage more collaboration on research among designers and enterprises, government agencies and others.⁸ With Singapore seeking to become a hub for Advanced Manufacturing, which relies heavily on innovation and technological advances, design research can add to our arsenal of knowledge-generation capabilities by helping us better understand the behaviour of people and macro socio-cultural trends. They will provide the Singapore economy a competitive edge.

How to achieve this?

Designers must engage in more research unique to the profession. "Design research" can look into the discipline to critically assess its methods and modes of thinking. It can also be conducted

through design, such as using it to investigate the human dimension in the development of new technologies. Finally, research for design is how practitioners systematically study the challenges and issues they are tasked to tackle in their projects.

What does success look like?

- ✦ Students can use design as a research probe for investigating issues and generating insights and knowledge unique to the profession.
- ✦ Students can use design research to spot trends and signals as well as to speculate about the future.
- ✦ Students can partner, collaborate or support other disciplines in research, be it design with engineering or medicine.
- ✦ Students can contribute to discourse on design, share it with the public and advance the knowledge and applications of design in industry and society.
- ✦ Students can develop design research tools, methodologies and frameworks that contribute to innovation and transformation in industry and society.

What are IHLs doing to support this?

Developing a foundation in research methods

by Nanyang Technological University

From 2025, students at the university's School of Art, Design and Media (ADM) will take a common core module to equip them with the essential skills involved in developing research proposals. DD3012 Research Methods in Art & Design started in 2012 as an elective to teach them how to conduct comprehensive literature reviews and craft research questions. Students also learn various research instruments, including designerly ways of researching, speculative design, visual research and design ethnography. They are taught the importance of ethical conduct in research too. The course has helped some 90 students enhance their design approach and laid the groundwork for research endeavours, including their final year projects.

“The class set an important foundation for my initial career in branding and also subsequently in my pivot to a user experience design and service design. I still remember the academic rigour that was required for the assignments and the many hours doing hands-on research, writing, analysis and insights gathering. These activities served as a good baseline for my work.”

Joseph Mak, former student and current design director of IBM

Researching alongside the faculty

by Singapore University of Technology and Design

Since 2012, the university's Undergraduate Research Opportunities Programme (UROP) has offered a platform for faculty and students to work on cutting-edge and innovative research projects together. Either can propose projects that are subsequently open for students to participate. The programme is voluntary and does not carry any credits, but it is acknowledged as a co-curricular achievement. A recent example is when two students worked with SUTD's engineering faculty and clinicians from SingHealth to develop temporal bone surgical models for ontological and skull base surgeries.

More than half of the Class of 2024 participated in UROP.

What more can be done?

IHLs should put in more effort to develop this pillar. They must further boost their research capabilities and share their output widely to showcase the value of design research and how it is distinct from other disciplines. It will help designers carve a space in the research arena and encourage non-design faculties to collaborate with them, ultimately raising the credibility of design research. To grow a design research ecosystem, more financial resources and long-term investments must be allocated into researching design-related topics comparable to areas like engineering and technology. Knowledge generation helps establish the intellectual credibility of design and anchor its role and value. By encouraging more research applied to local industrial needs, contexts and scale, design research can attract more resources too.

Experimental by Design

*Nurture bolder experimentation,
creative exploration and imagination*

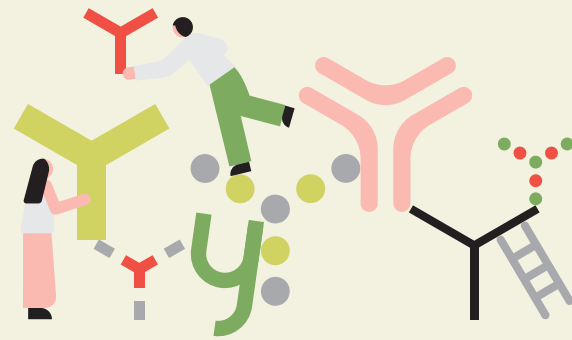
Why is this important?

At its core, creativity is about experimentation. Students who can push boundaries and question the status quo are more likely to successfully navigate complex issues and tackle new challenges. Those who are entrepreneurial and can seize emerging opportunities will also help Singapore develop a vibrant ecosystem of locally grown high growth companies that can power our future economy.

As students develop an experimental approach, they build up stronger muscles for creative discovery and problem solving that are crucial in a fast-changing labour market. The need to prepare students for multiple jobs over their career – some of which do not even exist yet – is something IHLs increasingly recognise. With their capacity to plan further ahead than the industry, IHLs are also ideal for students to incubate and experiment with new ideas and pathways that may define the standards of tomorrow. Thus, IHLs must step up and play this role of questioning possibilities as the industry is conservative and constrained by the need to fulfil short-term demands. In this way, the relationship between IHLs and the industry is transformed from one of dependence to symbiosis. IHLs will no longer just serve as the starting point of the profession but a partner in growing it too. By developing new futures for design, IHLs will become the new leaders of the industry.

How to achieve this?

Being experimental must be the foundation of design study in IHLs, and they can do so by providing a safe space for experimentation and time in the curriculum to do so. They can start with small steps to nudge students to become more experimental. For instance, decoupling grades from learning



outcomes to recognise there are many approaches to solving a problem. Or framing assignments with broad guidelines to give students the autonomy to try things out. Students should be exposed to subjects and topics beyond design to stretch their minds and inspire new perspectives. This includes the arts, which can serve as ‘the other bookend’ in the spectrum of design experimentation and expression. IHLs cannot develop this pillar alone. Students – and even their parents – must embrace failure as part of learning early in their education so as to develop the mindsets necessary to be experimental. The industry must also demonstrate that it values out-of-the-box thinking by partnering IHLs in projects that promote experimentation. Ultimately, Singapore can only become a creative city by shifting its cultural and societal norms.

What does success look like?

- ✦ Students are able to embrace failure as part of learning, identify why and how they fail and can use it productively in their design process.
- ✦ Students are comfortable to work on projects that may not have an immediate return of effort investment and on topics that may not be directly relevant.
- ✦ Students can critically and confidently question assumptions and existing ways of designing and push boundaries in their work.
- ✦ Students can develop novel designs, ways of designing and thinking that help distinguish Singapore design and advance the profession globally.

What are IHLs doing to support this?

Teaching students to fail

by Temasek Polytechnic

Experiencing failure is part and parcel of studio projects for students from the polytechnic’s Product Experience & Design diploma. Since 2018, the curriculum has instilled the concept of “productive failure” through teaching the iterative design process. Students use simple materials like cardboard, paper and tape to work on rounds of prototyping, testing, analysing, improving and reflecting. The step-by-step process helps them understand how to fail fast and move forward with clarity and purpose. This builds up a culture of continuous learning and improvement, encouraging students to be more open to taking risks and pushing the limits.

“Each successive prototype guides the students in making incremental improvements, building upon their previous idea.”

Ivy Teo, lecturer at Product Experience & Design

What more can be done?

Not enough is being done to nurture designers who can lead experimentation at work and even influence their non-design colleagues in doing so. Beyond projects, IHLs should help students push boundaries in their everyday practice. For instance, assessments must shift from outcome-based learning to encouraging exploration, so students are empowered to test boundaries and fail. Design schools should also broaden their curriculum to include art as a subject and counterpart faculty that will inspire new thinking and provide space for experimentation. Ultimately, nurturing an experimental and entrepreneurial spirit requires all stakeholders – students, parents, educators, industry, government and society – to change their mindsets.

A Distinctive Culture and Philosophy of Design Education

Inspire each IHL to be distinctive and unique in their value proposition and pedagogies

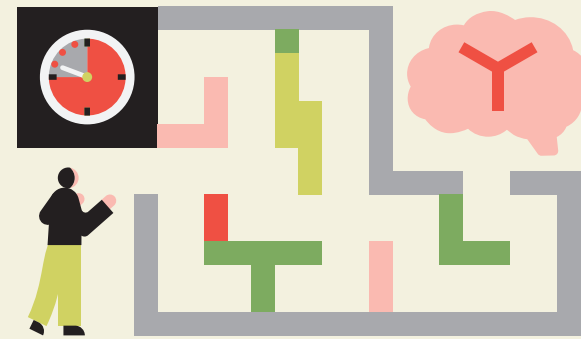
Why is this important?

Over the decades, Singapore has developed a thriving design education system by adapting curriculum and pedagogies from abroad. But this is no longer enough to ensure its graduates can flourish in the country's increasingly competitive labour market that attracts design talents from all around the world. IHLs must adapt to ensure it continues nurturing Singapore designers who can compete with the very best, and even have an edge over others. In a design world dominated by Western approaches rooted in the first industrial revolution, Singapore has an opportunity to develop its own philosophy of design that responds to the future and reflects our unique experience.

We can confidently tap on the successes that the local design industry has had in developing Singapore into a vibrant, future-looking city-state. Our practitioners have developed valuable capabilities and knowledge in fields such as urban design and landscape architecture. More recently, Singapore is leading the way in emerging fields such as healthcare design and digital governance. How can we translate our 'nation by design' experience and capabilities into unique philosophies of creative problem solving? As our surrounding Southeast Asia develops to become the second growth engine of Asia, there are many opportunities, both economically and culturally to tap into to promote Singapore's expertise in design and become a regional design hub.

How to achieve this?

IHLs must offer curriculum and pedagogies informed by Singapore's experience but tailored for the world. This will help them nurture a next generation



of practitioners who can sensitively engage with the needs and issues of our country and the region. Students must also be exposed to the rich and diverse heritage and culture around Singapore so they can design new interpretations to offer to the rest of the world. In an increasingly globalised design world, Singapore designers must stand out for being rooted in the local while also ready for the global.

What does success look like?

- ✦ Students can understand the distinctive challenges faced in Singapore, many of which have global relevance, and can apply our distinct approach of solving problems efficiently while overcoming constraints in their designs.
- ✦ Students can confidently work beyond Singapore and sensitively translate our local design experiences and success stories for regional cultures and contexts.
- ✦ Students can appreciate the richness of Southeast Asia and contribute to its future growth, helping Singapore become a design leader of the region.
- ✦ Students from around the world are attracted to study design in Singapore to learn our distinctive design culture and philosophies.

What are IHLs doing to support this?

Exchanging designs and cultures

by Nanyang Academy of Fine Arts

Since 2014, select diploma students from the School of 3D Design have participated in FurnitureOrigins, an annual workshop organised with the King Mongkut's University of Technology Thonburi (KMUTT) in Thailand. During the six-month programme, students across the two countries work together to develop furniture prototypes. The brief has expanded to wayfinding and uniform design in recent years. Through the exchange, the students develop skills in design and entrepreneurship. They also build a network of students from the two countries with the Thai furniture industry and beyond.

About 8 students from Singapore participate in this annual programme.

Incorporating the Southeast Asian dimension

by Nanyang Academy of Fine Arts

The Institute of Southeast Asian Arts (ISEAA) was established in 2010 to facilitate the assimilation of Southeast Asian arts within NAFA's curriculum. The ISEAA facilitates and commissions seminars and workshops led by regional artists for students, including those studying design as part of in-curricula modules. Since 2021, it has also conducted Southeast Asian masterclasses for the Bachelor of Arts (Honours) in Design Practice and Bachelor of Arts (Honours) Fine Art. Each engages with paradigms from Southeast Asia, such as the study of practice making and cultural symbols unique to the region.

"The workshop expanded my knowledge on matters that I usually encounter but oblivious to the historical, urbanism or social context to it."

Student participant

What more can be done?

IHLs must have the confidence to build up Singapore's unique design culture philosophy. They need to familiarise students with the local design experience and its many successes, as well as contextualise and connect these with global design histories. At the same time, students also must be encouraged to look outwards by exposing them to the richness of our region and creating opportunities to engage them in their design work. Doing so will help IHLs transform into distinct centres of learning and knowledge generation too. It will help them better attract diverse talents and groom a next generation of local practitioners who have the unique capabilities to help Singapore become a design leader in the region.

A North Star for Design Education

The DEAC's vision for the future of design education in Singapore is aligned with many existing efforts pursued by IHLs. The overlaps vary across the six pillars, and there are opportunities for synergistic collaboration as well as crucial gaps to address.

The following diagram, Figure 6, also illustrates the overall landscape of design education today by plotting the various design courses offered by the 14 IHLs in Singapore against the six pillars of the Point-of-Vision.⁹ Clearly, a good number of current courses already address some of the pillars. There are also opportunities to sharpen the focus as well as obvious gaps to fill with new offerings.

We hope our Point-of-Vision will serve as a North Star for Singapore's design education to guide IHLs in shaping their program and periodically review their programmes and efforts. They can use it to identify gaps and also discover new ideas to pursue. By doing so together, IHLs can ensure design education in Singapore is progressing systematically and holistically in the right direction. As new challenges and needs arise in the future, the Point-of-Vision must evolve with the adaptation of existing or new pillars. It is a living document that will strategically guide IHLs over the decades.

⁹ Data is based on all 14 IHLs self-reporting their design courses and tagging to each of the six pillars.

Point-of-Vision Pillars

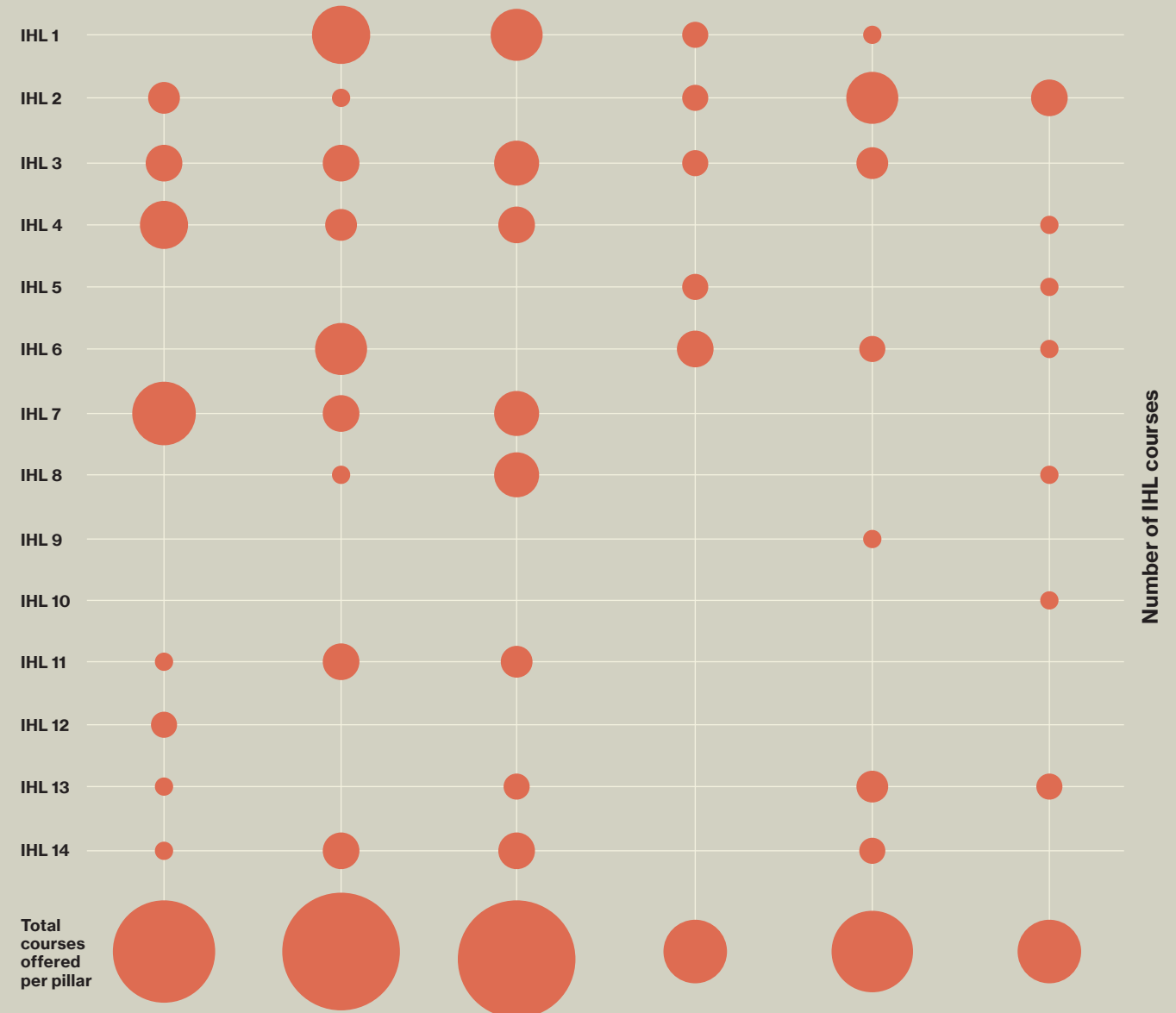
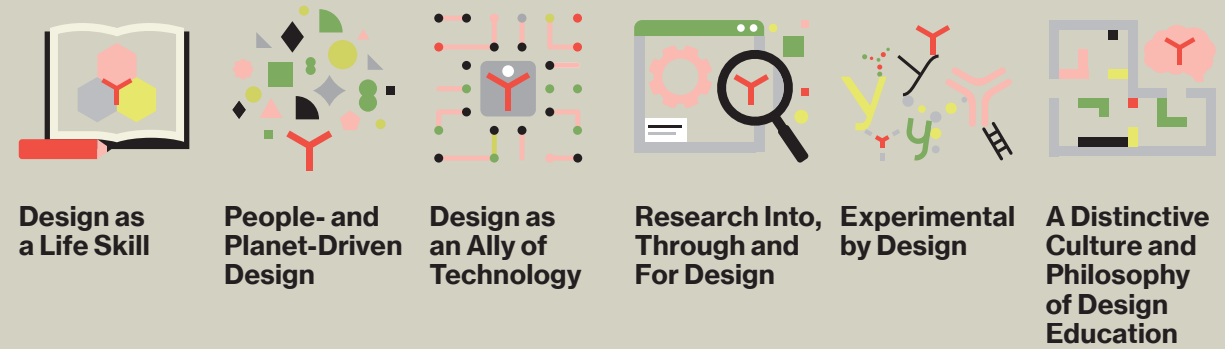


Figure 6: An overview of how existing IHL courses line up with the Point-of-Vision.

Working Together to Land the Vision

The Point-of-Vision cannot be realised by the design community alone. It needs the support of all stakeholders in Singapore, including policymakers, the education sector and society, who must:

- › Recognise **design** as offering **capabilities** that are desirable and essential for all graduates, disciplines and professions.
- › Infuse design as a **core creative problem solving capability** into the education continuum, from primary to secondary and tertiary education. The teaching of design should not begin only at the IHLs.
- › **Refocus** their current expectation of design education from one about preparing students for specific job roles towards equipping them with skill sets for the future.
- › **Change** their **perception** that a career in design lacks opportunities by better articulating its many prospects and the pathways of getting there from primary level all the way to IHL.
- › **Recluster design education** from the current matrix of arts, design and media into a horizontal that cuts across industries, domains, disciplines and faculties. This has to be supported by a better approach of matching design job types to capabilities so IHLs and the industry can understand how to implement it.
- › Enable IHLs to step away from their existing homogenous offerings and **boldly differentiate** themselves from one another.

- › **Actively fund** the development of design capabilities and design research projects to maximise the potential of the profession.
- › **Support tripartite alliances** like the DEAC so that industry, educators and the government can continue to have platforms to exchange knowledge and ideas about the future of design education.

It is only when all stakeholders collaborate in a sustained manner that we can ensure design education meets the changing needs of tomorrow. As design education evolves while remaining rooted and relevant to Singapore, it will grow into a crucial tool for shaping our future too.

Welcome to the Future Design School

4

Just as Singapore transformed Marina Bay into an iconic destination today, the nation needs an imaginative vision of design education for tomorrow that will inspire others to embark on this journey together.



The entire iconic Marina Bay front as we know today started with a reclaimed 'land canvas', 1980.

Imagine...

a day where society and all parents in Singapore understand design is not just about shaping things and experiences but also value it as an essential life skill.

Children in primary schools are exposed to creativity as part of their learning experience, picking up design as an experiential creative problem solving skill and learn how to apply it in their everyday lives.

As they progress into secondary education, they get to interact with design practitioners to apply design to real world challenges. This deepens their appreciation of experiential problem solving and nurtures their empathy as they see the world through the lens of others.

By the time they progress to tertiary education, all students will have developed design sensitivities,

attained design skills and capabilities that set them up for a well-rounded development.

Regardless of what they choose to do in life, they are comfortable working across different disciplines and use design to solve problems and also discover opportunities. Those who choose to become a designer are attracted by its different career pathways in defined design roles or working across industries that utilise design for innovation or research. There will be opportunities for individuals to be part of a larger organisation or an independent practice in a thriving creative gig economy too.

In Singapore's future design education setup, all students will be part of 'One Design School' – a network of different IHLs held together by the DEAC's Point-of-

Vision. Each IHL offers distinct courses and learning cultures that play to each institute's qualities, strength and heritage. They are staffed by a fluid pool of lecturers who are regularly updated with the latest in design practice as well as leading local practitioners. This forms a constant stream of knowledge and experience exchange that will lift the bar on learning quality, and at the same time, share scarce resources between the IHLs.

As part of this expansive learning environment, all students are grounded in the core design principles by acquiring skills and knowledge of the profession while being exposed to different disciplines to develop transdisciplinary practice and thinking. There is a strong emphasis on 'hands-on' craft coupled with 'minds-on' critical thinking as well as the flexibility to co-create their curriculum based on interests and learning strengths. Students can work with peers from other schools, be it from design or other disciplines, as

they collaborate without borders on real-world projects and experimental research in innovation labs. Through such platforms in design schools, students incubate new ideas and futures that will advance the industry. Design schools in the IHLs will thus become ground-zero for critical thinking and creative practice, provoking new ideas, challenging conventions and championing the sweet-spot between humanities, technology and the arts.

The 'One Design School' is further augmented by a virtual network of design practitioners and industry stakeholders that blurs the line of learning and practice through collaborative-partnership, realising the amalgamation between design education and industry. The mirroring of this virtual network to the physical facilities setup stretches the definition of design school beyond simply an environment, extending its reach across the region and to the world. Such a fluid yet structured exchange of knowledge, expertise and even

resources between education and industry will be a defining characteristic of Singapore's unique design education network.

The ultimate goal is to equip Singapore's workforce of tomorrow with the skills and capabilities to tackle the multiple contexts – organisational, political and cultural – that define our global challenges. They can use design as a discipline or capability to research and generate innovative ideas. They will also harness design to positively impact people and the planet as well as to ensure our tech-driven future supports the needs of humans. Finally, they can confidently leverage Singapore's unique design experience and philosophy for the progress of the nation and the region. In these ways, our workforce will rise up the value chain and contribute to the growth of an innovation-led economy in Singapore and transform it into a loveable city.

This is the vision the DEAC has for the future design school in Singapore by 2050 and beyond. Over the last four years, our work in reimagining design education has benefited greatly from having a national-level platform for industry and education leaders together with government agencies. It facilitated the exchange of diverse views and forged a common understanding of the challenges and opportunities for design education in Singapore. The term of the DEAC may have ended, but the transformation has only just begun. It will take a collective and sustained effort from all stakeholders in design education – be it practitioners, policy makers, educators, students, parents and supporters – to develop our next generation of creative thinkers, problem solvers and a global, resilient workforce expected to help Singapore thrive in the future economy.

We have a blueprint for reimagining design education. Let's start the movement in building the future design school now.

"The Singapore design ecosystem has evolved, and along with that, design leaders in academia and industry must adopt adaptive mindsets and capabilities to posture themselves for a more expansive and shifting context where design is proving to be a game-changer across many sectors, including technology, business, finance, healthcare, and hospitality."

Elaine Ho
Director, School of Design,
Temasek Polytechnic

"In the future, design and design education in Singapore will be at the forefront and well-integrated into our lives. Design will take centre-stage and be the catalyst and will evolve alongside the Science, Technology, Engineering and Maths as part of our national education focus areas. Several tenets: interdisciplinarity, creativity, authentic or real-world learning pushes the boundaries of design and technological innovation, human or humanity-centred design and for design sensibilities to be fully expanded in the way we live, work and play."

Nur Hidayah Bakar
Dean, Faculty of Design,
LASALLE College of the Arts

"If the DEAC's recommendations are successfully implemented, Singapore will emerge as a dynamic and innovative nation, celebrated for its creativity, design excellence, and vibrant cultural heritage. Positioned at the forefront of the global creative economy, Singapore will take the lead in nurturing well-being and fostering creative thinking among its populace."

Crystal Chu
Creative Director,
Kingsmen Exhibits

"Greatness is built over time through constant working and trying. Can we have a design education ala Sagrada Familia style which crosses over time and yet stays relevant to its current times and is awed by all?"

Ho Semun
Former Chief Executive Officer,
Singapore Fashion Council

Appendix

Abbreviations +

DEAC	Design Education Advisory Committee
DERC	Design Education Review Committee
Dsg	DesignSingapore Council
EDB	Economic Development Board
IHLs	Institutes of Higher Learning
IMDA	Infocomm Media Development Authority
MCCY	Ministry of Culture, Community and Youth
MOE	Ministry of Education
MOM	Ministry of Manpower
MTI	Ministry of Trade and Industry
NAC	National Arts Council
SSG	SkillsFuture Singapore
WSG	Workforce Singapore

Industry Associations +

AAMS	Association of Advertising and Marketing Singapore
DBCS	Design Business Chamber Singapore
IDCS	Interior Design Confederation Singapore
SFIC	Singapore Furniture Industries Council
SFC	Singapore Fashion Council
SIA	Singapore Institute of Architects
SILA	Singapore Institute of Landscape Architects
SIP	Singapore Institute of Planners
SIDS	Society of Interior Designers Singapore

Institutes of Higher Learning +

ITE	Institute of Technical Education
	Polytechnics
NYP	Nanyang Polytechnic
NP	Ngee Ann Polytechnic
RP	Republic Polytechnic
SP	Singapore Polytechnic
TP	Temasek Polytechnic
	Autonomous Universities
NTU	Nanyang Technological University
NUS	National University of Singapore
SIT	Singapore Institute of Technology
SMU	Singapore Management University
SUSS	Singapore University of Social Sciences
SUTD	Singapore University of Technology and Design
	Arts Institutions
LASALLE	LASALLE College of the Arts
NAFA	Nanyang Academy of Fine Arts

National agendas relevant to the Point-of-Vision +

21st Century Competencies

A suite of core values and competencies outlined by the Ministry of Education to help Singapore students thrive in this fast-changing world. They underpin the holistic education that our schools provide to better prepare students for the future. In 2023, three emerging competencies were added to enable students to thrive in and beyond school while living, learning and working in rapidly changing, highly digitalised, and interconnected environments. They are:

- > Critical, Adaptive and Inventive Thinking
- > Communication, Collaboration and Information Skills
- > Civic, Global and Cross-Cultural Literacy

<https://www.moe.gov.sg/education-in-sg/21st-century-competencies>

Long-Term Plan Review (for Singapore's land use)

A guide for the development of Singapore, mapping out strategic land uses and infrastructure needs over the next 50 years and beyond.

<https://www.ur.gov.sg/Corporate/Planning/Long-Term-Plan-Review>

Singapore Economy 2030

A guide to chart the country's next lap of growth through the four key pillars of Trade, Enterprise, Manufacturing and Services.

<https://www.mti.gov.sg/COS-2023/Committee-of-Supply-2023/Singapore-Economy-2030>

Singapore Green Plan 2030

A whole-of-nation movement to advance Singapore's national agenda on sustainable development.

<https://www.greenplan.gov.sg>

Smart Nation

A digital-first Singapore where the government, economy and society harnesses technology to effect transformation in health, transport, urban living, government services and businesses.

<https://www.smartnation.gov.sg/>

List of DEAC's public engagements



April 2022	DEAC shared its work in Term One with Ms Low Yen Ling, Minister of State, Ministry of Culture, Community and Youth and Ministry of Trade and Industry .
May 2022	DEAC presented its recommendations to Mr Gan Kim Yong, Minister for Trade and Industry, to explore future opportunities and collaborations.
August 2022	DEAC's Term One Report was launched. Its findings and recommendations were covered by over 30 media outlets, including CNA, Lianhe Zaobao and GovInsider.
October 2022	Dsg Executive Director Dawn Lim shared DEAC's work and Term One report at the 29th General Assembly of the International Council of Design in Kaunas, Lithuania.
December 2022	<p>DEAC member Lynette Ong, who is also the Chief Operating Officer of Tan Tock Seng Hospital, spoke to The QED Changemakers Podcast about the importance of equipping workers of the future with design sensibilities and transdisciplinary skills – two of the committee's key tasks.</p> <p>DEAC member Professor Tamas Makany from the Singapore Management University presented a history of design education in Singapore and the DEAC's plan to reshape it for the future at the Innovative Design Education for the Future Forum in China.</p> <p>Dsg's head of international relations Chen Guanyou shared the work of the DEAC at the Business of Design Week in Hong Kong.</p>
May 2023	DEAC members launched a series of projects with SGEEnable, the focal agency for disability in Singapore. One example was a design challenge that saw students from Temasek Polytechnic develop products with sustainable materials for persons with disabilities to produce.
June 2023	DEAC Chairman Low Cheaw Hwei published an opinion in <i>the Business Times</i> on the committee's work and how design education will help Singapore develop a more resilient workforce.
September 2023	DEAC member Tan Yen Yen, Director of the MAD School at Singapore Polytechnic, spoke about design education in Singapore and the work of the committee during the China-Singapore Design Education Summit.

Acknowledgements

DEAC Members and Resource Panel

(Term Two: April 2022 to March 2024)

Industry

Mr Low Cheaw Hwei (Chairman)
Former Product and Spatial Design Practice Lead, Philips Global
Former Head of Philips Experience Design and Government and Public Affairs
Philips ASEAN Pacific

Ar Alan Tay
Founder
Formwerkz Architects

Mr Bojan Blecic
Managing Director
Group Head, Customer Experience
Oversea-Chinese Banking Corporation

Ms Crystal Chu
Creative Director
Kingsmen Exhibits

Ms Ho Semun
Chief Executive Officer*
Singapore Fashion Council

Mr Hong Khai Seng
Founder and Director
Studio Dojo

Mr Jeff Cheong
Chief Executive Officer
DDB Group Singapore

Mr Lee Tze Ming
Co-founder and Director
STUCK Design

Ms Lynette Ong Wan Kee
Chief Operating Officer
Tan Tock Seng Hospital

Mr Pann Lim
Co-founder and Creative Director
Kinetic Singapore

Ar Seah Chee Huang
Chief Executive Officer
DP Architects

Institutes of Higher Learning

A/Prof Agnes Xue

Associate Professor
Chair, Applied Research
Business, Communication and Design
Singapore Institute of Technology (SIT)

Mr Albert Lim

Director
School of Design and Media
Nanyang Polytechnic (NYP)

Prof Ashraf Kassim

Associate Provost, Education
Singapore University of Technology Design (SUTD)

Mr Callistus Chong

Senior Director
School of Design and Media
Institute of Technical Education (ITE) College Central

A/Prof Cheah Kok Ming (till September 2023)

Associate Professor (Educator Track)
Assistant Dean (Undergraduate Programmes)
College of Design and Engineering
National University of Singapore (NUS)

Ms Elaine Ho

Director
School of Design
Temasek Polytechnic (TP)

Ms Emida Natalaray

Director
School of Technology for the Arts
Republic Polytechnic (RP)

Dr Ho Shen Yong

Executive Director
Institute for Pedagogical Innovation, Research &
Excellence
Nanyang Technological University (NTU)

Ms Nur Hidayah Abu Bakar

Dean
Faculty of Design
LASALLE College of the Arts

Mrs Pang-Eng Peck Hong

Director
School of Design and Environment
Director
The Sandbox
Ngee Ann Polytechnic (NP)

Dr Peter Chuah Chin Kah

Head
Experience Design programme
School of Business
Singapore University of Social Sciences (SUSS)

Ms Sabrina Long

Dean
School of Art and Design
Nanyang Academy of Fine Arts (NAFA)

A/Prof Tamas Makany

Associate Professor of Communication Management
(Practice)
Lee Kong Chian School of Business,
Singapore Management University (SMU)

Ms Tan Yen Yen

Director
Media Arts and Design School
Senior Director
Business and the Creatives Cluster
Singapore Polytechnic (SP)

Resource Panel

Mr Adrian Ong

Director
Jobs and Skills Division
Infocomm Media Development Authority (IMDA)

Ms Gillian Woo

Director
Creative and Professional Services Division
Workforce Singapore (WSG)

Mr Li Jingheng (till September 2023)

Director*
Workforce Strategy and Policy Department
Ministry of Manpower (MOM)

Ms May Tan

Director
Education and Development
National Arts Council (NAC)

Ms Tracy Lee (till January 2024)

Director*
Industry Development Division 2
SkillsFuture Singapore (SSG)

*Organisation and designation held during tenure
in DEAC Term Two

DEAC Secretariat

(Term Two: April 2022 to March 2024)

DesignSingapore Council

Ms Dawn Lim
Executive Director

Ms Emily Ong (till October 2022)
Deputy Executive Director and Director*
Talent Development and Corporate Development

Mr Eugene Chin
Director
Talent Development

Ms Sheena Lai
Assistant Director
Talent Development

Ms Lo Sok Ming (till June 2023)
Assistant Director*
Talent Development

Mr Will Zhang
Manager
Strategy & Governance, and Talent Development

Ms Sia Pei Ying
Assistant Manager
Talent Development

Mr Yee Yeong Chong
Senior Assistant Director
Marketing Communications and Content

Ms Serene Lim
Assistant Director
Marketing Communications and Content

Ms Karen Koh
Senior Manager
Marketing Communications and Content

Ms Pearlyn Cheu
Manager
Marketing Communications and Content

With support from

Singapore Ministry of Trade and Industry (MTI)
Singapore Ministry of Education (MOE)
Singapore Economic Development Board (EDB)
Ideactio Pte Ltd

A/Prof Jesvin Yeo
Associate Professor, School of Art, Design and Media
Deputy Associate Provost (Strategy), President Office
Deputy Director, University Scholars Programme
Nanyang Technological University (NTU)

A/Prof R Brian Stone
Interim Head, Division of Industrial Design
Associate Professor (Educator Track)
National University of Singapore (NUS)

Mr Remy Choo
Director
Planning and Programmes Division,
Training Partners Group
SkillsFuture Singapore (SSG)

A/Prof Wong Chen-Hsi
Acting Chair
School of Art, Design and Media
Nanyang Technological University (NTU)

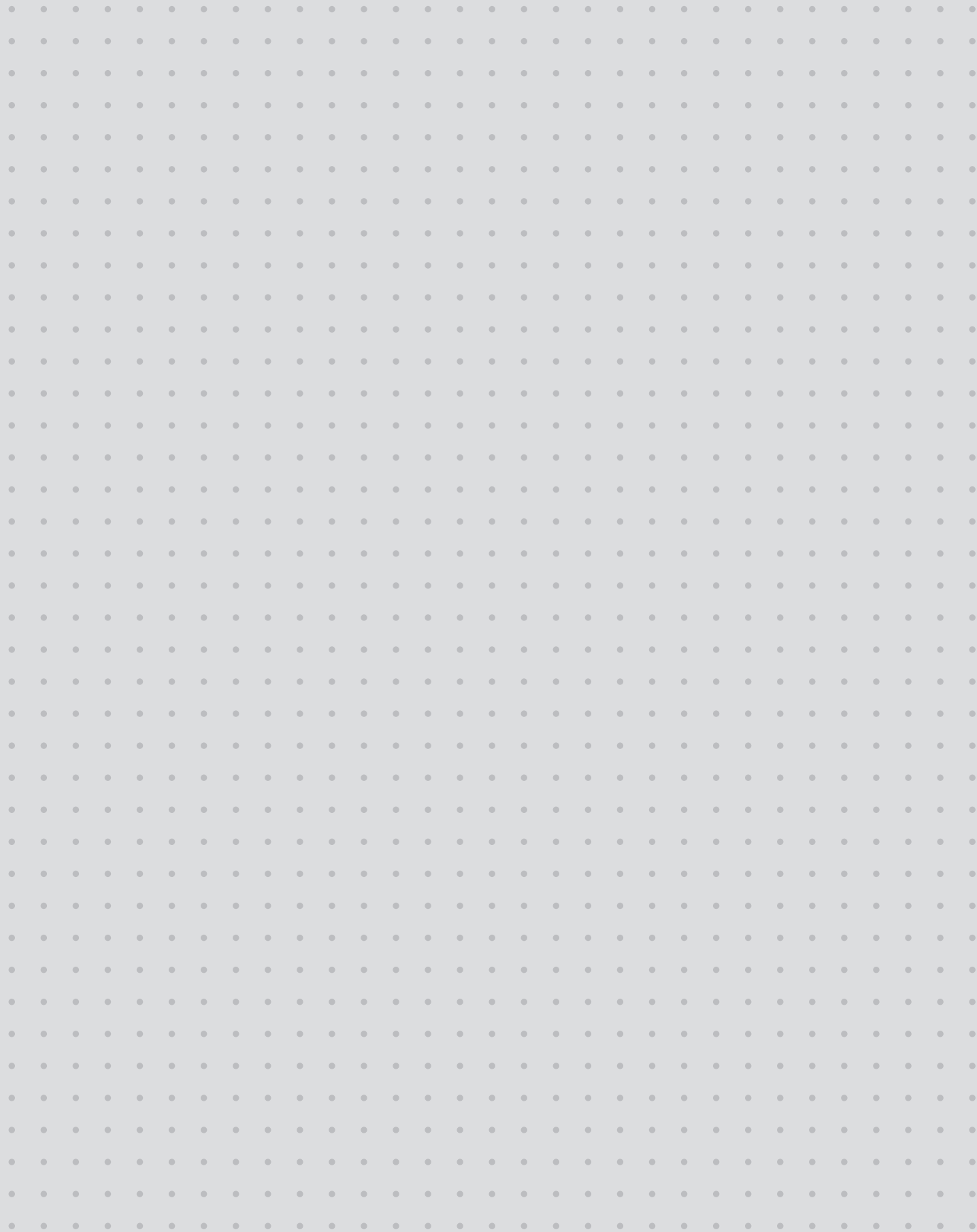
We would also like to thank the many school leaders, educators, students, industry professionals and colleagues from the public service agencies for their input and time.

We sincerely apologise that we are unable to acknowledge every individual and organisation which we worked with but would like to thank everyone involved in this report.

Co-written with In Plain Words
Designed by H55

*Organisation and designation held during tenure in DEAC Term Two

Notes



Notes

