

The Design Mindsets Playbook

A School's Resource for Nurturing
Design Mindsets as Future Skills



Getting Started

Why does this resource matter?

Singapore's education system is globally recognised for its strong foundation in academic excellence and problem-solving. Building on this success, there is a growing need to nurture greater creative confidence in our young—equipping them not just to master content, but to navigate ambiguity, think expansively, and act with imagination and adaptability. Design mindsets will help them do just that—enhancing their ability to solve problems and empowering them to live, work, and play with greater confidence.

This playbook is part of the Learning by Design initiative to cultivate design mindsets in students. Grounded in local and global research, it underscores the vital role of schools in creating learning environments that nurture innovation, resilience, and creative growth.

Value of Design Mindsets

Design mindsets aligns with and enhances Singapore's MOE Framework for 21st Century Competencies and Student Outcomes. Here are how the mindsets can directly support the development of future-ready Singaporean students:

Tangible Application of 21CC Skills:

The practice-based focus of design thinking is embedded in real-world problems, providing practical tools for students to implement 21st Century Competencies into real-world contexts.

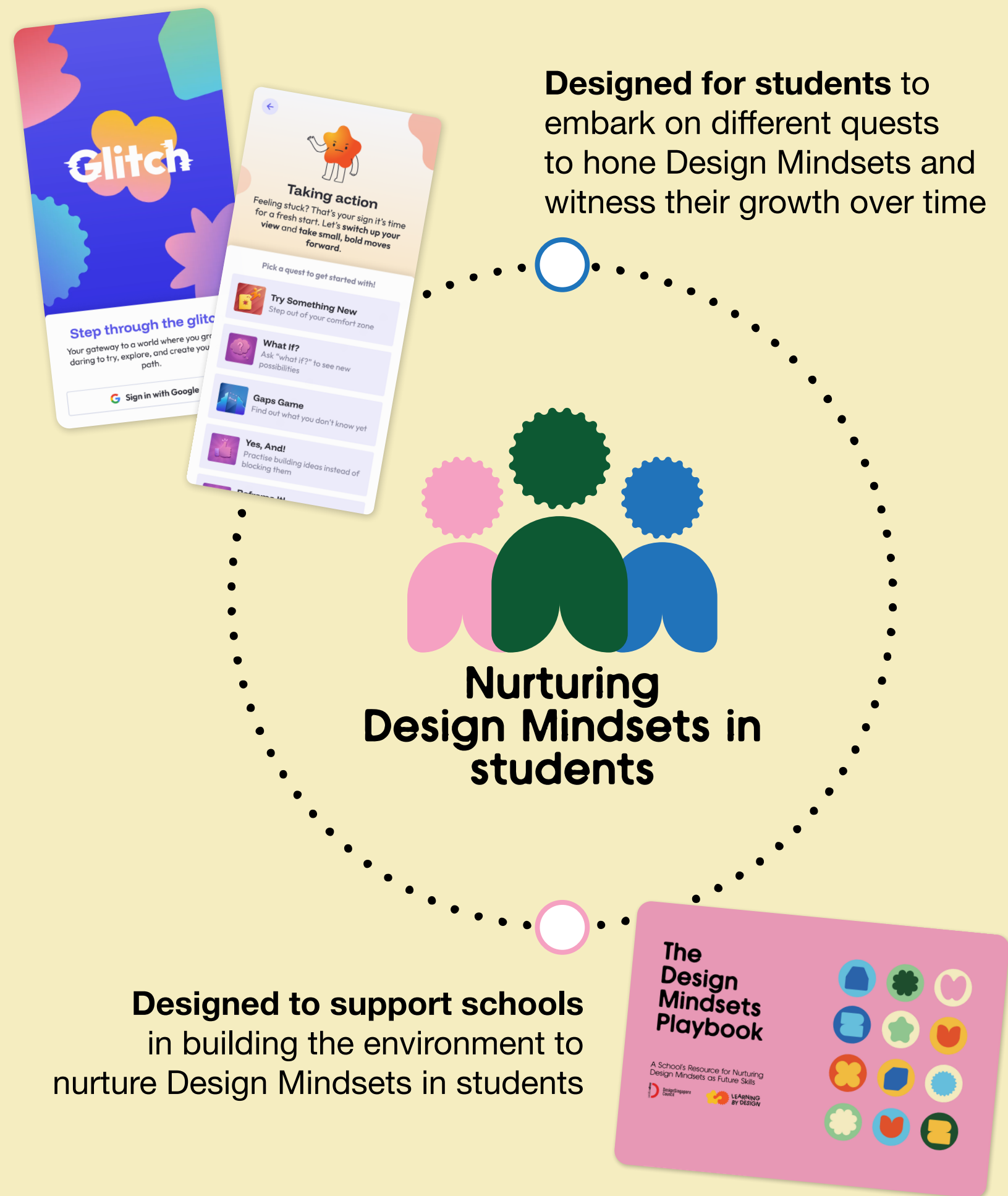
Developing Student Agency and Creative Confidence:

Empowers students to become catalysts who forge connections and create meaningful impact in larger ecosystems, helping them to build greater agency and confidence in approaching open-ended problems with multiple potential solutions.

How do I make the most of this resource?

This playbook forms part of a suite of tools for a holistic approach to nurture Design Mindsets in students. To effectively do so, it **requires collaborative effort from both the student and the school environment** with its supporting structures working in close partnership.

This resource is best used in conjunction with our Design Mindsets tool, 'Glitch', a personal development tool designed for students in the General Education landscape. Educators and parents can also create accounts to experience the tool and find out more about Design Mindsets.



How do I navigate this resource?

In this resource, you will be guided through a series of reflections, good practices and stories of implementation to find the most suitable practices for your school in this endeavour.

To navigate this resource, start by choosing one of the options below on how you would like to explore the playbook:

- 1** Select a statement that describes your current situation, and we'll guide you through a recommended user journey to explore this playbook
- 2** If none of the statements fit, use the navigation bar to find topics that interest you

Contents



What are Design Mindsets?



What is the Good Organisational Practices framework?



Learning Environment



Cross-disciplinary Pedagogy



Ecosystem Support



Where can I find additional support?

What are Design Mindsets?

With its **practice-based, iterative approach**, design thinking has been proven to be strong in nurturing **five key mindsets**, transforming them from abstract values into actionable approaches for creating positive change.

COURAGE



- Take the first step, even when you are unsure
- Own what you don't know and have the humility to learn
- Dare to try, speak up, and learn from mistakes

CURIOSITY



- Enjoy the excitement of discovering new knowledge and ideas
- Develop a habit to ask questions, and challenge assumptions to understand the world more deeply
- Always on the lookout for better ways of doing things

EMPATHY



- Listen closely, observe carefully, and try to see the world through their eyes
- Tune in to others' feelings and needs
- Find solutions that truly help and resonate with them

OPTIMISM



- Spot opportunities in challenges
- Reframe problems to uncover better solutions
- Connect ideas to reveal the bigger picture

TENACITY

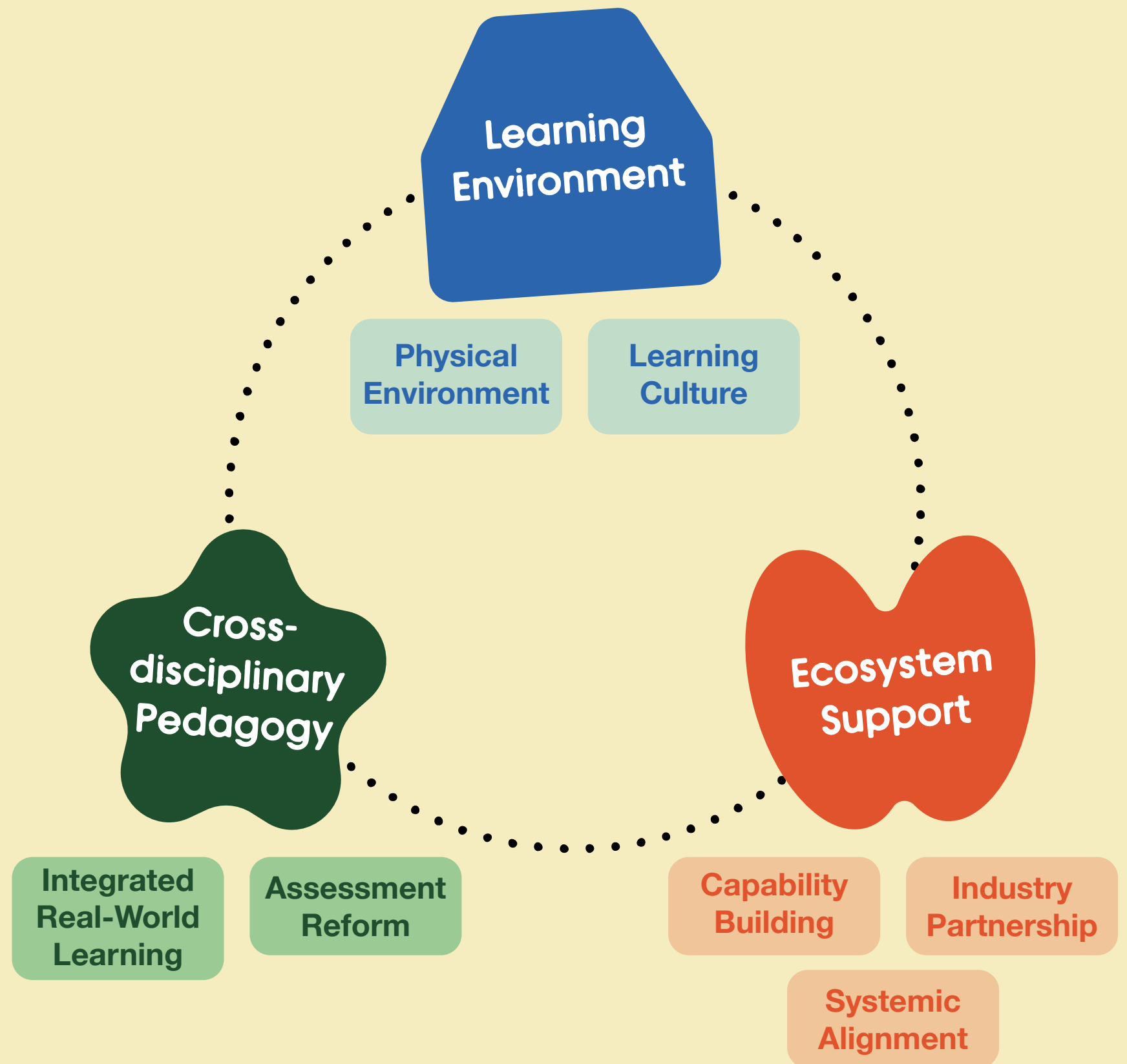


- Embracing failure as opportunity for growth and improvement
- Stay strong and determined in face of setbacks
- Keep moving forward, no matter the challenge

What is the Good Organisational Practices framework?

This resource aims to **support schools to nurture Design Mindsets in individuals**. School personnel can apply these good organisational practices to support development of desired behaviours and mindsets in students.

The following framework defines the good practices and highlights the interconnected dimensions critical for schools to consider and assess their current state — with guidance on how to take action on 3 broad focus areas.



Learning Environment

The **physical space** and **learning culture** are crucial in nurturing Design Mindsets because they directly influence how students engage, collaborate, and innovate.

What impact and value does this create?



For Schools

- **Innovative Culture:** Flexible spaces and experimentation zones highlight the school's commitment to forward-thinking education.
- **Adaptability:** A culture of risk-taking and exploration prepares schools to address evolving educational needs.



For Teachers

- **Enhanced Collaboration:** Open, collaborative environments reduce hierarchies between students and teachers, fostering better teacher-student partnerships.



For Students

Engaged Learning: Flexible, interactive spaces and design sandboxes make learning hands-on and exciting.

Empowered Mindset: A culture that embraces failure and promotes student-led exploration builds confidence and resilience.

Future-Ready Skills: Exposure to dynamic environments and iterative processes develops problem-solving, creativity, and adaptability.



"(In order for) people to do design thinking, **you need to give them a space that they can work with.** Many schools, what they do is they give students a space they can design or change, a wall they can decorate ... or how they want to rearrange their tables and chairs so that they can provide themselves with a more conducive classroom environment."

Secondary School Teacher



"Reggio Emilia emphasises creative expression and emotional development, giving children autonomy to guide their own learning process. **The school environment is designed as a "third teacher,"** with materials and spaces set up to provoke exploration, imagination, and collaborative learning."

Reggio Emilia Schools, Italy
<https://www.reggiochildren.it/en/reggio-emilia-approach/>

Taking stock and charting our path: Our school's learning environment

Before we begin learning about good practices, we need to first **assess our current states** and **identify the ideal future states** we want to work towards.

Use the following questions to reflect on the learning environment in your school.

Once you have identified your goals, let's learn about how to go about achieving them.

How would we describe the overall atmosphere and culture in our school or classroom?

Today...

What we want to see...

When we observe students in our learning spaces, what behaviours and mindsets would we notice?

Today...

What we want to see...

What evidence does our school have that shows its culture encourages risk-taking and learning from mistakes in students?

Today...

What we want to see...

Good organisational practices

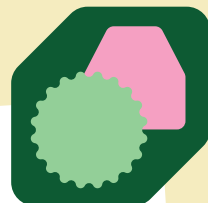
Physical Environment

Flexible spaces, collaborative areas, and experimentation zones encourages creative thinking and supports diverse learning styles, whether through individual reflection or group problem-solving.



Experimentation Areas

Establish “Design Sandboxes” or maker spaces where students can safely test ideas and engage in low-stakes experimentation.



Flexible Spaces

Create adaptable learning areas that can be reconfigured for individual work, group collaboration, or hands-on projects.



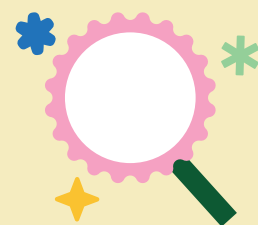
Inspiring Atmosphere

Use dynamic layouts, visuals, and materials to stimulate curiosity and creativity.



Resource-Rich Environment

Provide access to materials, technology, and tools that inspire creativity and experimentation.



Let's identify what we can do differently for your school!

Which of these practices are more suited to our school/classroom's context? How would it need to be contextualised to our needs?

What aspects of our physical learning spaces either enable or hinder collaborative, hands-on, and experimental activities?

Where could we make changes to better facilitate these approaches?

Good organisational practices Learning Culture

A supportive learning culture allows students to feel safe to explore ideas, experiment, and lead their learning, fostering mindsets essential to design thinking.

Celebrate Iteration

Teach students that learning is a process, and iterating on ideas is a key to success. Emphasise exploration and prototyping over simply delivering “right answers”.

Choice and Autonomy

Allow students to take ownership of projects, propose ideas, and lead initiatives to build confidence and independence.

Encourage Risk-Taking

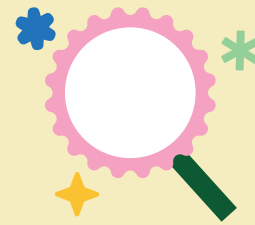
Foster a mindset where taking risks and making mistakes are embraced as part of the learning process.

Open Communication

Foster an environment where students feel safe to express their ideas without fear of judgment, enhancing creative confidence.

Value Exploration

Promote play-based and student-driven learning to inspire curiosity and initiative.



Let's identify what we can do differently for your school!

Which of these practices are more suited to our school/classroom's context? How would it need to be contextualised to our needs?

How do our current teaching methods and classroom management either encourage or discourage open communication, iteration, and student-centred learning?

What specific changes, even small ones, could we implement soon to start shifting our learning environment in a more positive direction?

Which pitfalls is our school most at risk of?

The following are common pitfalls when attempting to implement effective learning environments. Which do you believe your school is most likely to encounter or struggle with? Select the ones that concern you most and consider strategies to address them proactively.

Rigid spaces

Static environments restrict creativity, collaboration, and adaptability

Hierarchical structures



Strict teacher-student roles stifle dialogue and student ownership of learning

Discouraging mistakes



Subtle cues (e.g. passing comments or judgement) can make students fear failure, holding back risk-taking and curiosity

Over-structuring

Excessive control limits creative flow, autonomy, and problem-solving

One-size-fits-all

Uniform approaches overlook diverse needs, reducing inclusivity and personalised growth

Form over function



Meaningful learning and outcomes are hindered when spatial design is prioritised without planning for effective use

What can we do to mitigate the risk of these pitfalls?

Cross-disciplinary Pedagogy

Pedagogy plays a key role in fostering Design Mindsets by shaping **how students connect ideas, approach challenges, and reflect on their learning.**

What impact and value does this create?



For Schools

- **Holistic Education:** Cross-disciplinary integration fosters collaboration and positions schools as leaders in modern education.
- **Community Impact:** Real-world projects strengthen school-community connections and relevance.



For Teachers

- **Dynamic Teaching:** Cross-disciplinary approaches and reflective assessments enable more engaging and meaningful instruction.



For Students

- **Life Skills:** Cross-disciplinary learning builds broad problem-solving abilities.
- **Future-Ready Skills:** Real-world projects develop practical skills like teamwork and critical thinking.
- **Building of Design Mindsets:** Reflection-based assessments encourage growth, persistence, and learning from failure.



"Education must prepare students to be global citizens who can navigate an increasingly interconnected world. Learning should not be confined to the classroom; students need to **engage with real-world challenges and develop skills that help them understand and contribute to global issues.**"

Alex Beard, "Natural Born Learners"



"There was an **award given to students for displaying dispositions.** How we tried to measure was incorporated in the reflections booklet. This helps students to **identify their strengths and weaknesses and to develop their understanding of design thinking dispositions.** The teachers used a rubric to match the students' reflections to the design thinking dispositions."

Primary School Teacher

Taking stock and charting our path: Our school's cross-disciplinary pedagogy

Before we begin learning about good practices, we need to first **assess our current states and identify the ideal future states** we want to work towards.

Use the following questions to reflect on the learning environment in your school.

Once you have identified your goals, let's learn about how to go about achieving them.

How would we describe the teaching methods in our school or classroom?

Today...

What we want to see...

What opportunities does our school provide for students to engage with real world learning?

Today...

What we want to see...

How do our assessment practices support the growth and development of Design Mindsets?

Today...

What we want to see...

Good organisational practices

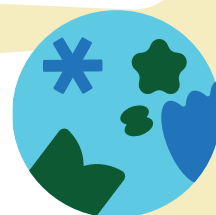
Integrated, Real-World Learning

Incorporating real-world, project-based learning helps students connect ideas across disciplines while tackling authentic community and industry challenges. This fosters holistic problem-solving, innovation, and the practical application of Design Mindsets.



Integrating Creative Arts

Incorporate art, music, and drama into the core curriculum to encourage self-expression and innovative thinking.



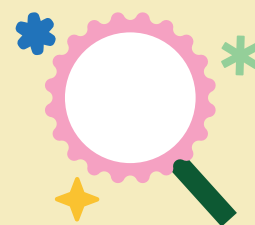
Real-World Problem Solving ?

Structure learning around authentic, real-world challenges. Collaborating on community and industry problems to make learning meaningful.



Thematic Teaching ?

Coordinate across disciplines to show students the context of a phenomenon, and give them the ability to see context and patterns.



Let's identify what we can do differently for your school!

Which of these practices are more suited to our school/classroom's context? How would it need to be contextualised to our needs?

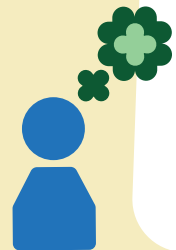
How might these approaches enhance the learning experience for our students?

How could we redesign lessons to better integrate subjects and highlight connections between subjects or disciplines?

Good organisational practices

Assessment Practices

Shifting from standardised testing to reflection-based assessments values the learning process, encourages authentic problem-solving, and nurtures key Design Mindsets.



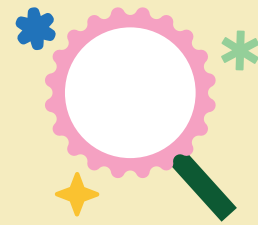
Implement Reflection Based Assessments



Valuing the learning journey helps students develop self-awareness, resilience, and critical thinking skills.

Complement Existing Assessment Metrics with Design Mindsets

Help students to identify their strengths and weaknesses in Design Mindsets in addition to other metrics, to support their understanding and development in them.



Let's identify what we can do differently for your school!

Which of these practices are more suited to our school/classroom's context? How would it need to be contextualised to our needs?

How might we reform assessment practices to value the learning journey and Design Mindsets?

What small changes to our assessments could we implement soon to encourage students to reflect on their learning process and growth?

Which pitfalls is our school most at risk of?

The following are common pitfalls when attempting to implement effective learning environments. Which do you believe your school is most likely to encounter or struggle with? Select the ones that concern you most and consider strategies to address them proactively.

Lack of real-world relevance

Using abstract problems disengages students and limits meaningful application of Design Mindsets

Rigid application of design thinking

Treating design thinking as a step-by-step process rather than a mindset

Overemphasis on measurement

Focusing too heavily on quantifying design mindsets can detract from the organic development of them

Overemphasis on output

Focusing on the final deliverable and output (e.g. presentable prototypes) over learning and reflections during the process

Over-structured projects

Excessive control over project-based learning limits creativity, autonomy, and the iterative process critical to design thinking

Subject silos

Isolating disciplines limits students' ability to see connections and develop holistic problem-solving skills

What can we do to mitigate the risk of these pitfalls?

Ecosystem Support

Ecosystem support is crucial for **embedding design thinking**, **fostering collaboration**, **enhancing teacher capabilities**, and **aligning systemic practices** to support and recognise Design Mindsets.

What impact and value does this create?



For Schools

- **Enhanced Educational Outcomes:** Integrating design thinking makes learning more relevant and aligns with modern educational goals, elevating the school's reputation for fostering innovation.
- **Improved School Culture:** A supportive environment that encourages risk-taking and learning from mistakes fosters a growth mindset throughout the school community.



For Teachers

- **Professional Growth:** Teachers gain new skills, confidence and a deeper understanding of design thinking, enabling them to create engaging learning experiences.
- **Collaborative Support:** Professional development and learning communities provide ongoing support, helping teachers stay current and effective.



For Students

- **Holistic Development:** Supportive ecosystems allow for a holistic and practice-based development of Design Mindsets. The mindsets are practiced and recognised in all facets of their lives.



“Community-based, learner-centred ecosystems are alternative designs for public K-12 education that leverage the people, partners, and power of each community to support every child through their unique learning journey. By design, **young people contribute to the community as they learn** (and vice versa!), strengthening collective well-being.”

Education Reimagined
<https://education-reimagined.org/>



“You need leadership thinking. And the communications. There is a **need for a ‘core team of leaders’ to drive the implementation of design thinking** within the school.”

Secondary School Principal

Taking stock and charting our path: Our school's ecosystem support

Before we begin learning about good practices, we need to first **assess our current states and identify the ideal future states** we want to work towards.

Use the following questions to reflect on the learning environment in your school.

Once you have identified your goals, let's learn about how to go about achieving them.

How are we supporting our teachers to nurture Design Mindsets in students?

Today...

What we want to see...

What structures do we have in place to maintain momentum of design thinking efforts in our school?

Today...

What we want to see...

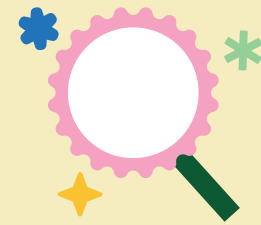
How consistently is design thinking being supported across the school (levels, departments)?

Today...

What we want to see...

Good organisational practices Capability Building

Train teachers to build confidence in experimental teaching and support student-led learning.



Let's identify what we can do differently for your school!

Collaborative Learning Communities ?

Teacher-led learning communities where educators can share experiences, challenges, and strategies for implementing design thinking in their classrooms.



Professional Development ?

Regular workshops and training sessions for teachers focused on methodologies and techniques which fosters the nurturing of Design Mindsets. This could include training on how to facilitate brainstorming sessions, prototype development, and reflection activities.



Teacher Resource Kits

Resource kits that include tools, templates, and case studies to guide and support teachers in nurturing Design Mindsets.

Which of these practices are more suited to our school/classroom's context? How would it need to be contextualised to our needs?

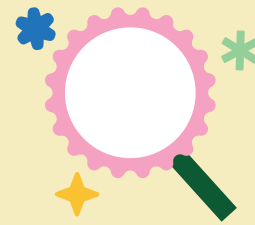
How do our current professional development opportunities align with teachers' needs in nurturing Design Mindsets?

In what ways can we help teachers transition from traditional instructions to more experimental, student-led learning approaches?

Good organisational practices

Industry Partnership

Partner with industry for mentorships, guest speakers, and real-world projects to apply Design Mindsets in authentic contexts.

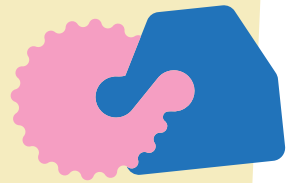


Let's identify what we can do differently for your school!

Which of these practices are more suited to our school/classroom's context? How would it need to be contextualised to our needs?

How do our current professional development opportunities align with teachers' needs in nurturing Design Mindsets?

In what ways can we help teachers transition from traditional instructions to more experimental, student-led learning approaches?



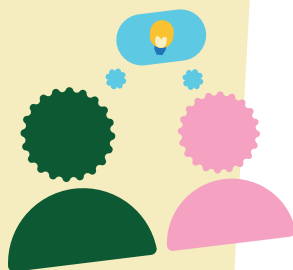
Real-world Collaboration

Create opportunities for students to collaborate with industry partners on actual projects. Such experiences help students see the value and application of design thinking outside the classroom



Guest Speaker Series

Invite professionals from different industries to speak about how they use design thinking in their work. These talks can inspire students and provide practical examples of what design thinking can achieve.

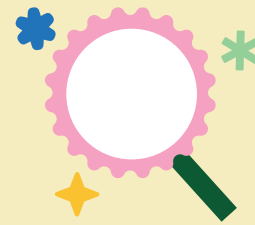


Mentorship Programmes

Establish mentorship programmes where students are paired with industry professionals who can share real-world insights, challenges, and best practices related to design thinking.

Good organisational practices Systemic Alignment

Various stakeholders across the school system are bought into the value of Design Mindsets and the efforts to nurture them are consistent with larger school efforts.

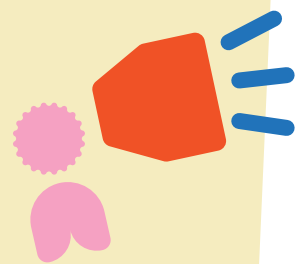


Let's identify what we can do differently for your school!

Which of these practices are more suited to our school/classroom's context? How would it need to be contextualised to our needs?

Where do we see resistance to design thinking implementation in our school, and what might be the underlying causes?

How can our school ensure efforts in nurturing Design Mindsets survive beyond individual champions or programmes?

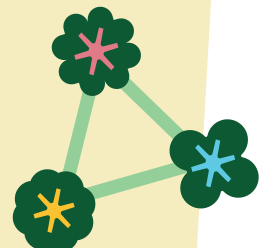


Advocates of the Practice

Facilitate sharing between the advocates of design thinking or similar methodologies that nurture design mindsets with those who may be on the fence or have not experienced its value.

Design Leadership

Representation of design thinking practitioners, advocates in the school board and/or leadership to drive implementation.



Platforms for Continuity

Students should be provided with opportunities to showcase and put the design mindsets into practice beyond discrete and once-off programmes.

Which pitfalls is our school most at risk of?

The following are common pitfalls when attempting to implement effective learning environments. Which do you believe your school is most likely to encounter or struggle with? Select the ones that concern you most and consider strategies to address them proactively.

Force-fit application

Inadequate change management for educators can result in misapplication and frustration.

Inconsistent, contradictory application

Inconsistent application can lead to confusion and limit impact. For instance, students efforts in experimentation are met with systemic resistance beyond programmes.

Linear implementation mindset ?

Approaching cultural change as a one-time, perfect rollout rather than embracing an iterative process prevents valuable learning from small experiments and incremental improvements.

Superficial application ?

Insufficient time allocation, resources and adequate training can hinder proper design thinking implementation, leading to superficial engagement.

What can we do to mitigate the risk of these pitfalls?

Where can I find additional support?

Embarking on this journey may not be easy but we are here to help! Check out our list of resources that can support your efforts in nurturing Design Mindsets.

Want to understand more about Design Mindsets?

Find out what the five Design Mindsets are, why they matter and how they can be nurtured.

Curious about current initiatives available to schools?

Check out our Learning by Design portal to learn more about our programmes, resources and communities

Need resources to support your teaching efforts?

Check out our Design Tools, created to support the nurturing of Design Mindsets

Have any questions or thoughts?

Reach out to the team - we're all ears and ready to respond!