

Executive Intelligence:

*If at first you
don't succeed*

• Don't Try Again. Try Differently.

Insights from Future of Innovation Lab x
Lee Kuan Yew Centre for Innovative Cities

MOST ONLY HALF RIGHT

Most agree failure tolerance is essential for innovation. But what if that foundational idea is only half true? And what if failure tolerance is not one thing, and some types make us more adaptive than innovative?

• WE FOUND OTHER HALF

SUTD found the other half. Unlike established pedagogical approaches like Productive Failure, which focus on cognitive struggle before instruction, SUTD research findings highlight what happens after failure and how that response is shaped by interactions across people, tools, and systems. We identified three ways to nurture the right types of failure tolerance that lead to more innovation.

01

**Stay Open Minded
Despite Setbacks i.e.
Emotional Resilience
Fuels Creative Risk**

02

**Reframe Before
Redo i.e. Strategic
Switching Is a
Teachable Skill**

03

**Become Sense-Makers
Beyond Prompt Engineers
i.e. With AI Teammates,
We Need Sense-Makers**

BIG TOPIC:

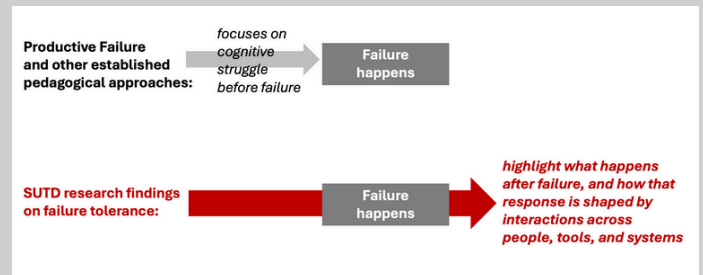
How do we cultivate the kind of failure mindset that leads not to safer outcomes, but to bolder innovation—especially in an AI-rich world?

Ask any educator, innovation lead, or startup founder and they will likely agree: failure tolerance is essential for innovation. It's a core belief behind design thinking, prototyping, and entrepreneurial education.

But what if this foundational idea is only half true? New research from SUTD shows that while failure tolerance matters, not all forms of it fuel innovation. Some forms might even get in the way.

Our project examined how students respond to failure during design work. Over two years, across courses and campuses, the team uncovered a critical insight: **failure tolerance is not one thing**. Emotional, behavioral, and strategic responses to failure each lead to different outcomes.

Unlike established pedagogical approaches like Productive Failure, which focus on cognitive struggle before instruction, our findings highlight what happens after failure and how that response is shaped by interactions across people, tools, and systems.



Our approach also had one big difference from existing approaches: we focused on failure in challenges with unknown open-ended solutions (e.g. design and innovation), contrasting with many existing approaches that focus on problems with known answers (e.g. a math problem, a fixed process etc.)

Here is the kicker: **some types of failure tolerance make students more adaptive, not more innovative**. That means we are often reinforcing habits that make students better at recovery, but not better at reinvention.

“Failure tolerance is not one thing...some types of failure tolerance make students more adaptive, not more innovative”

Hence below we present three insights that cultivate the kind of failure mindset that leads not to safer outcomes, but to bolder innovation:

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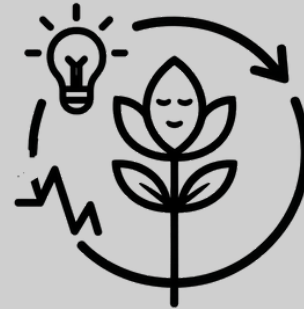
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01 Emotional Resilience Fuels Creative Risk

Our research found that emotional failure tolerance—students’ ability to stay engaged and open-minded despite setbacks—was the strongest predictor of innovativeness. Unlike students who grew attached to a single idea or approach, emotionally resilient students **tried more ideas, quicker, and with less fear of being wrong.**

In SUTD’s flagship design course in which all Freshmore students participate, our research interventions helped students stay open minded to keep iterating despite setbacks.

Implication: To foster innovation, we need to grow students’ emotional flexibility and reduce their fear of iteration—not just build their stamina for sticking with a plan.

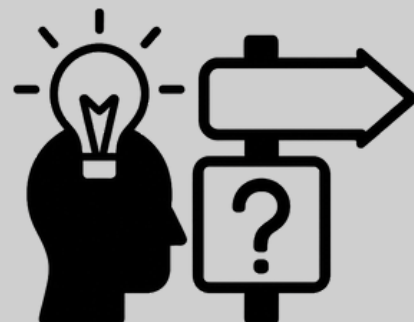


02 Strategic Switching Is a Teachable Skill

When failure occurs, the question is not “how do I fix this?” It is “what’s another way to think about this entirely?” In our observations, some students responded to failed prototypes by trying more of the same—minor tweaks, added features. But others learned to reframe the problem itself.

One student team in the design course initially designed a light installation with a narrow entryway and oversized steps. After receiving user feedback that the space felt **claustrophobic** and the stairs did not **meet BCA guidelines**, the team did not just modify the design incrementally. Instead, they **systematically rethought the spatial layout**—experimenting with **barrier lengths, angles, heights**, and eventually **adding compliant stairs and handrails** in various locations. This was not mere iteration—it was strategic redirection.

Implication: Strategic redirection is not innate. It can be taught, practiced, and assessed as a core design competency. This kind of redirection in design is rarely individual; it grows from interactions with others and with technologies.



03 In a World of AI Teammates, We Need Sense-Makers

AI does not just provide answers—it provokes new questions. In the design course, students using generative tools like GPTs learned to test assumptions, simulate counterarguments, and refine their design questions. But these gains only happened when students felt safe enough to discard output, ask “what else?”, and revisit their framing.

In a world of AI teammates, students must become sense-makers, not just prompt engineers. This is an interactional skill: students must move between human and machine perspectives, question them, and then iterate across a distributed network of knowledge and interpretation.

Implication: Design AI education must equip students to navigate ambiguity with confidence—to question, interpret, and iterate with both machines and humans.



Closing Thought

There is an old advice that “if at first you don’t succeed, try and try again”.

That could be bad advice because trying again is not enough. In the age of Design AI, we need learners who try differently. Our research reveals that the path to innovation runs through emotional resilience, strategic reframing, and the ability to navigate complexity—not just endure it.

Hence, we have to redesign how we nurture innovators. For example:

For educators: design assignments that reward pivoting, not just perseverance.

For business leaders: recognise strategic switching as a marker of potential, not inconsistency.

For policymakers: invest in programs that grow emotional agility alongside technical skill.

The future belongs to those who know when to ask a better question, shift gears, or start over smarter. Let us design for that.