SUTD Leap

[RE]IMAGINE EDUCATION

A weekly Design.AI newsletter

ROCKET REBOOT: TURNING ROCKET CRASHES INTO DESIGN•AI BREAKTHROUGHS

Dishi Gautam and Thia Wei Soon, SUTD Academy

Every crash is a chance to learn. Players collect stars, dodge asteroids, and rebuild with AI.

In this week's feature, we blast off into *Rocket Reboot*—a bold reimagining of how we teach design thinking by fusing learning science, gameplay, and AI collaboration. Set in a universe of crash landings and cosmic redesigns, Rocket Reboot invites learners to play their way through the Double Diamond, not by memorizing frameworks but by living them: crashing, reflecting, iterating, and launching again. This isn't just gamification; it's pedagogy at rocket speed. It's SUTD's play-to-learn pedagogy in full throttle—where every asteroid is a teachable moment, and every crash is a design opportunity.

Picture this: You've just dodged your fifth asteroid, collected a cluster of stars, and crash-landed back to base. Time to head to the Hangar, where your Artificial Intelligence (AI) design partner is ready to help you reimagine your rocket. Welcome to Rocket Reboot! Here, every flight teaches you something new, and every reboot gets you closer to rocket mastery.

Ready to co-create your own rocket? Play today at https://dlcc.sutd.edu.sg/play

This newsletter is produced with ChatGPT and other AI tools as super-collaborators. The authors contribute the core ideas, drafts, strategic framing, pedagogical insights, and design direction, while AI supports creative articulation.

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More Than Just Another Digital Thing

When we started this project, we could have built yet another educational application that feels like, well, homework. Instead, we asked ourselves: What if learning Design Thinking felt less like sitting through a lecture and more like actually designing with AI?

Rocket Reboot launches learners into an iterative cycle of flight, failure, and redesign. You start with a test flight to discover the landscape and see how far you can push your rocket. Then retreat to the Hangar to create a new rocket with your AI collaborator, Patch. And once you're ready, select a Design Thinking Boost and launch. Each flight mission teaches you something new about both rocket design and your own problem-solving process.

In the Hangar, players collaborate with Patch, their AI teammate, to redesign rockets.

> *I'm interested to know how fast players go through the design thinking process," says Noel Ho, Sr. Technologist at SUTD Academy. "I'm also excited to learn about what strategies players employ to achieve high scores."*

The 4D Sauce: Where Learning Science Meets Rocket Science

Every element in Rocket Reboot maps directly to established design and learning frameworks, but in ways that feel natural rather than forced.

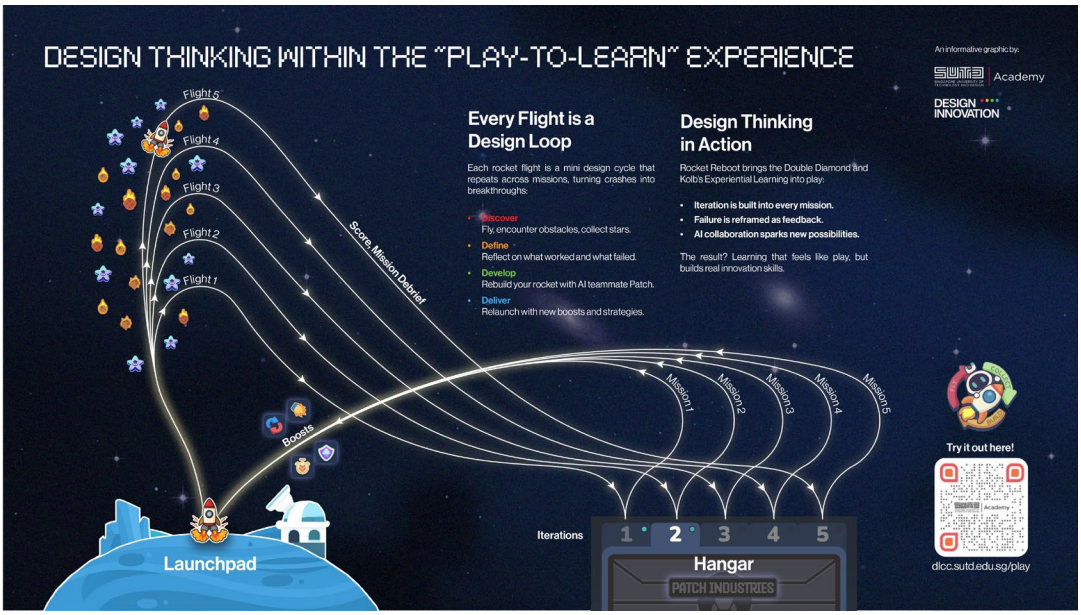
The entire experience is structured on the 4D framework: You **Discove**r during flight, experiencing the challenges, obstacles, and opportunities firsthand. Then you **Define** your goals and objectives based on what you've learned (need better shields? stronger magnetic field?). In the **Develop** phase, you create and evaluate new rocket designs with your AI collaborator, exploring possibilities and making strategic choices.

Finally, you **Deliver** by launching the improved rocket with selected boosts to test hypotheses and complete missions.

All with AI as your teammate, your tool, and sometimes neither.

Kolb's experiential learning cycle drives each flight-to-redesign loop, while Harvard's Pedagogy of Play creates "productive play" where learning feels joyful rather than forced. Heutagogical principles guide Patch's behavior; it prompts reflection rather than providing solutions.

But here's what makes it work: these aren't academic exercises dressed up as a gamified experience. The mechanics emerge naturally from the learning goals. This IS the Double Diamond, experienced at rocket speed. We call it the 'Play-to-Learn' pedagogy.



An information graphic illustrating how a learner experiences design sprints over the course of many flight missions.

Plot Twists and Learning Curves

Building Rocket Reboot was its own design challenge, complete with failures, pivots, and breakthroughs:

Challenge #1 : What's human and what's AI?

This was our biggest design puzzle: How might we create an AI teammate that enhances creativity without taking over? The AI offers guidance and help, rather than solutions. Just like a teammate would.

Challenge #2 : Consistency in learning experience

How do you create something that works for both 18-year-old AI-users discovering design for the first time, and 58-year-old professionals with decades of strategic experience in strategy and systems but little AI familiarity? The answer lies in giving players agency: you can choose when to lean on AI for support and when to chart your own course. No matter the path, the heart of the experience remains the same.

> *"The biggest challenge was striking balance between game components," explains Danny Chow, Innovation Specialist at SUTD Academy. "In a way, we went through the Design Thinking experience ourselves when making Rocket Reboot."*

Challenge #3 :
Meet our new colleague : an LLM

We practiced what we preached. Just like players iterate on their rockets, we iterated too: creating, testing, breaking, and rebuilding with AI. It helped us simulate gameplay scenarios, refine game logic, and even inspire art direction decisions, while we took the role of sense-makers. Our development process became its own workshop in Design·AI, with AI as a team member.

> *We could produce mid -high-fidelity UI/UX mockups within one brainstorming session!" exclaims Lester Lim, Design Innovator at SUTD Academy.*

Why This Matters for SUTD (Besides Being Really Cool)

SUTD has been built on Design Thinking. It's in our DNA, our pedagogy, and our approach to everything we do. Rocket Reboot represents a leap into SUTD's Design·AI narrative; a commitment to bringing Design·AI to the public in innovative, accessible formats.

This collaboration between DLCC and DIO demonstrates that our unique position—combining design expertise, technological innovation, and educational research—allows us to contribute meaningfully to the future of human-AI collaborations.

> *I hope players realize they shouldn't be intimidated by AI," says Koh Chong Lin, Research Sr. Officer at SUTD Academy. "It unlocks creative potential that wouldn't be possible otherwise.*

Here's a snapshot of what our collaborations looked like over the course of the project. The team co-designed Rocket Reboot with AI, iterating on gameplay, visuals, and strategy in real time.

Shaping the Next Journey Together

We see Rocket Reboot as more than a single project. It is a sandbox for cross-disciplinary co-design. What happens when learning scientists, AI developers, designers, and domain experts come together to invent new ways of working with AI? Beyond this project, how portable is the “Play-to-Learn” approach? Could it be extended to fields such as healthcare, sustainability, or aviation? What needs to stay and what needs to adapt? These are the questions that drive us forward.

That is why we are inviting collaborators to join us in refining how artificial intelligence can serve not only as a teammate for learners but also as a co-developer behind the scenes. Industry partners can work together with us to translate the lessons from Rocket Reboot into training tools that support organizations in exploring, experimenting, and discovering their own Design·AI practices. Come explore this journey with us.

Play today at
https://dlcc.sutd.edu.sg/play

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