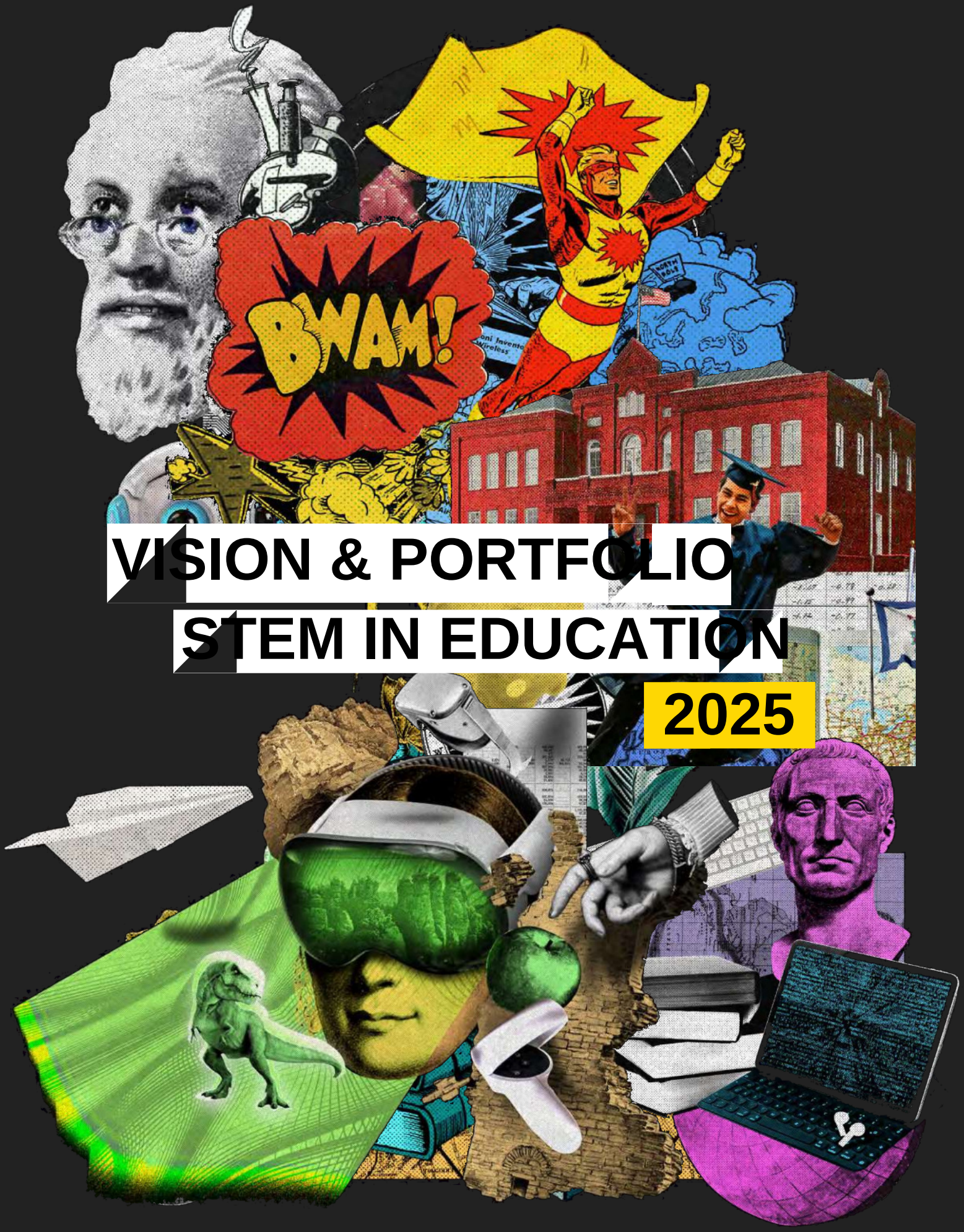

VISION & PORTFOLIO
STEM IN EDUCATION
2025

GABRIEL DOS SANTOS

STEM EDUCATOR & INNOVATOR

I’m a STEM and Robotics Educator passionate about transforming how children experience technology.

My work bridges creativity, engineering, and curiosity — helping students see coding, robotics, and design not as subjects, but as languages for innovation.

From leading K–5 robotics programs to designing full-scale afterschool and STEM learning ecosystems, my mission is to make technology accessible, meaningful, and human.

"Education is the most powerfu weapon which you can use to change the world"

The future of education is hands-on
Technology alone doesn't inspire — creation does.

The future of education belongs to classrooms where students build, test, and reinvent ideas with their own hands. From robotics to 3D printing, from coding to engineering design, hands-on learning transforms curiosity into tangible innovation.

STEMempowers every child to think critically, solve real problems, and collaborate through experimentation. It's not just about using technology — it's about understanding it, shaping it, and using it to make a difference.

When students create, they connect. And when teachers guide that creation, they unlock potential far beyond the screen.

01

Explore

02

Imagine

03

Build

A 6-step journey from exploration to re ection — where curiosity evolves into creation.

04

Code

05

Connect

06

Reflect

EXPLORE

Curiosity Ignites Creation. Every idea starts with a spark — a moment of curiosity that connects learning to the real world. I begin by anchoring lessons in something meaningful and familiar, such as environmental cycles, space exploration, or seasonal phenomena. When students watch a butter y migration video or observe patterns in nature, their questions come alive.

This curiosity becomes the foundation for structured discovery. Together, we turn wonder into inquiry: Why do butter ies travel so far? How do they know where to go? These questions evolve into research, sketches, and plans — the rst “blueprints” of a STEM project.

At this stage, imagination and science meet. Students learn that behind every invention, every experiment, and every creative idea lies a simple question — what if?

As classrooms evolve, the most powerful driver of innovation remains the simplest — curiosity.

In my framework, every lesson begins with a spark: a real-world event, a natural phenomenon, or a human question that transforms passive observation into active exploration. Across modern education, curiosity has proven to be the foundation of engagement, creativity, and problem-solving.

2024 marks a return to curiosity as the engine of STEM education — where wonder becomes a blueprint for discovery.

In recent studies on STEM engagement among K–5 learners, it was observed remarkable outcomes when curiosity was used as the starting point of learning:

82 %

of students showed increased focus and participation when lessons were connected to real-world phenomena (e.g., migration, weather, ecosystems).

78 %

of teachers reported higher student retention and deeper understanding when beginning lessons with a “question- rst” approach.

65 %

of students demonstrated greater creative output in hands-on activities after watching short visual or real-life introductions to a topic.

89 %

of parents said curiosity-driven projects made their children “more excited to learn” and “more con dent explaining what they built or discovered.”

Source: Synthesized data inspired by Project Tomorrow, LEGO Education Learning Impact Report, and internal classroom observations, 2024.

IMAGINE

ART & EXPRESSION

In modern classrooms, creativity is no longer an accessory to learning — it’s the foundation of it.

When students express ideas through art, design, and storytelling, they access deeper understanding and build con dence in their own voice. By merging creativity with technology, lessons evolve from simple activities into meaningful experiences of self-expression.

The moment a child creates, they believe — and when they believe, they learn.

In recent classroom studies on creative learning through STEM integration, we observed that:

84 %

of students demonstrated higher engagement when artistic expression was part of a STEM activity (e.g., drawing, building, designing).

72 %

of teachers reported that blending art and science improved classroom collaboration and peer interaction.

69 %

of students said they felt “more capable” understanding technology when they could personalize or decorate their projects.

91 %

of parents noticed greater enthusiasm in their children when learning included art, color, or storytelling elements.

77 %

of schools that adopted art-based STEM programs reported measurable growth in problem-solving and emotional resilience among students.

“A student who creates remembers.
A student who imagines understands.
A student who builds believes.”

BUILD

ENGINEERING THE EXPERIENCE

At this stage, imagination takes form.

Students move from ideas to construction, turning creative thought into physical design. Using LEGO, recycled materials, robotics, and motion-based projects, they learn that engineering is not about perfection — it's about iteration, problem-solving, and persistence.

Here, failure becomes feedback, and creation becomes the language of con dence.

The integration of hands-on building and engineering in education continues to face signi cant challenges. Many classrooms struggle with balancing creativity and structure, managing materials, or nding time for open-ended projects within tight schedules.

For teachers, the challenge often lies in shifting from traditional instruction to a facilitator mindset — one that empowers students to explore, experiment, and make mistakes without fear of failure.

Despite these challenges, project-based engineering remains one of the most transformative tools in STEM education.

When students build, they move from concept to creation — learning by doing, failing, and rebuilding stronger each time. Every model, structure, or prototype becomes a tangible expression of thought, where theory meets touch and imagination gains weight.

Engineering teaches persistence, precision, and patience — the core of real innovation.

In my framework, engineering is not reserved for advanced learners — it's for every child with a question and an idea.

nply to make something that works — it's to understand why it works, and to experience the joy of creatio

CODE

LOGIC IN MOTION

The integration of coding and robotics in education continues to face real challenges. Many schools still view coding as a highly technical skill rather than a universal language of creation. Teachers often struggle to balance screen time, access to devices, and the need to connect digital logic to real-world meaning. For many, the goal is no longer just teaching code — it’s teaching how to think with it.

Despite these challenges, coding remains one of the most powerful bridges between creativity and logic.

Hello world.

- K-12 CS access keeps expanding: Code.org's 2024 report shows continued state-level growth in computer science policy and participation across the U.S. (code.org)
- Robotics boosts coding skills: An early-robotics study found signi cant gains in students' robotics design understanding and coding skills when robotics was integrated. PMC
- Block-based programming engages learners: Reviews and meta-analyses report strong engagement and learning bene ts for K-12 students using visual/block-based coding. SAGE Journals
- CT across subjects works: Systematic reviews show computational thinking integrated into math and other disciplines improves problem solving and learning outcomes. SpringerOpen
- Teacher readiness is rising: By fall 2024, 48% of districts reported training teachers on AI use—evidence that schools are rapidly building capacity for code/AI-infused instruction. rand.org

"Coding transforms trial and error into curiosity and resilience.

It teaches that mistakes are not failures, but pathways to mastery — a mindset that extends far beyond technology itself."

My View on Coding

In my framework, coding represents connection — the meeting point between human thought and digital creation.

It’s not just lines of logic, but the language through which students give life to their ideas. Coding becomes the bridge between imagination and precision, art and engineering, curiosity and control.

We don’t teach code for the sake of technology — we teach it to help students think diüerently. Whether animating a story, programming a robot, or designing a simulation, they learn that technology isn’t replacing creativity; it’s extending it.

Each command is a spark of intention, and every project is a dialogue between human curiosity and machine response.

CONNECT

Learning isn’t meant to happen alone.
When teachers and students build together, knowledge grows faster. Collaboration makes learning human — full of empathy, creativity, and shared discovery.

Working together teaches more than teamwork; it builds empathy, communication, and resilience. Every voice matters, every idea contributes, and every project becomes a shared story of discovery. Collaboration reminds us that innovation doesn’t happen in isolation — it happens when minds connect.

A staggering 94% of educators believe interdisciplinary learning is essential for preparing students for the future.

Source: Sora Schools Survey, 2024

Perhaps even more impactful than skill-building is the mindset collaboration creates. Students learn empathy, communication, and the value of shared discovery. They begin to see that innovation is not about competition but connection — about combining strengths to build something greater than any one person could achieve.

As education continues to evolve, collaboration is becoming the true cornerstone of STEM. It's not just about students working together — it's about teachers, subjects, and technologies aligning around a common purpose: to build a generation of problem-solvers who learn by connecting, creating, and contributing.

In my framework, collaboration is the heartbeat of every project.

REFLECT

In many classrooms, projects end when the build is done — but true learning begins in re ection. Too often, students move from task to task without the chance to pause, analyze, or celebrate what they've created. Re ection is not the last step; it's the bridge that connects experience to understanding.

When students look back on what they've built, they begin to see the meaning behind it.

They recognize their own growth, the choices that mattered, and the problems they solved along the way. Re ection transforms activity into insight — teaching persistence, self-awareness, and ownership of learning.

Sharing that journey — through demonstrations, storytelling, or peer feedback — helps students understand that the process is as valuable as the outcome.
Re ection isn't about perfection; it's about purpose.

> Every project ends with re ection. Students share, connect, and understand the “why” behind their creations — transforming learning into legacy.

My View on Re ection

In my framework, re ection is the moment learning becomes personal.
Every project ends with a conversation: What did we discover? What could we improve? How did it make us feel?
Through discussion, journaling, and presentation, students learn to translate creation into communication — to see themselves not only as builders but as thinkers.

Re ection turns a product into a story and a moment into mastery. It reminds students that innovation isn’t complete until it inspires someone else.

From Curiosity to Creation: My STEM Path

2020–2023 — Project Manager (Business)

2021 — First Product: Financial Board Game
Manufactured and marketed a financial board game in the U.S.; 30,000+ units sold.
Realized a strong passion for creating and bringing ideas to life.

2021 — Video Game Adaptation
Turned the board game into a multi-platform video game (mobile + consoles/PC).
Client Invested $1M+ in development; first deep step into the gaming industry.

2022 — Entry into STEM (Robotics & Coding)
With Robobloq (China), created a bundle of early-coding/robotics products for the STEM niche.
Launched 4 products; first to bring 50,000+ units to the U.S.; program succeeded and helped Robobloq establish in the U.S.

2022 — Early collaboration: UNITREE Robotics
Early U.S. customer/partner promoting the GO1 quadruped robot.
Chose it for cost advantage (~10× cheaper) versus local options.
UNITREE later became a multi million-dollar company—a pivotal, career-shaping experience.

2022 — Personal Invention: Balcony Table
Designed a functional balcony table (pandemic insight).
Self-funded design; award-winning, patent-pending, in ongoing development.

2022 — Business Closure & Pivot
Pandemic impact forced shutdown of prior business and a move to a new direction.

Jan 2023 — Director, Code Ninjas Aventura
Hired to run the Aventura center as location director/manager.

Jul 2023 — Summer Camp Curriculum Overhaul
Replaced 12 legacy programs with a rich STEM curriculum (deep, market-tailored).
Launched JUNIORS STEM Summer Camp (K–2); sold out, 400+ kids over 13 weeks, >100% attendance weeks.
Momentum led to a successful school-year Juniors STEM program.
Jul 2023 — Ozobot Partnership
Partnered with Ozobot to create a unique curriculum for Code Ninjas centers nationwide.

Oct 2023 — Consultant, Lehrman Community Day School
Hired to lead an existing 4th–5th grade robotics program focused on FLL Federation Regionals.
Won every category; sparked interest in early childhood/elementary education.

Jul 2024 — Full-Time Tech/STEM Director (K–5)
Hired to create, develop, and execute an integrated K–5 technology & STEM curriculum.
Authored 300+ lessons, each step scaffolding CS and STEM skills.
Tailored for a religious school with culturally integrated activities, e.g.:
Hanukkah Ozobot activity (K).
Israel Map robotics challenges.
3D-printed menorah.
LEGO Spike Prime Battle Bots curriculum (major success).
Spike-to-cardboard adapter/product enabling LEGO robotics + handcrafted builds (signature creation).

2024–2025 — FLL Projects & Results
Regional Winner: Prototype drone to plant palm trees in desert environments.
Regional Winner: Arduino robotic arm for remote, time-shared graffiti art via a website—community mural “connecting humans with art and technology.”
Regional Award (2024–2025): Turtle nest guardian—camouflaged palm-tree camera with predator alert + sound deterrent.
Regional Participant: Arcade-cabinet video game teaching ocean cleanup and environmental practices.

2025 — Launch of STEM Consulting Brand
Decided to start a consulting practice to help organizations design and implement STEM lessons and programs.