COUNTING THE STARS

2018 Blueprint for Pedagogy / for Education / for Architecture / for Nepal
Surya’s Story

When Surya was four years old, his mother Dil Maya began his homeschooling. Two hours from the nearest school in rural Nepal, Surya and Dil Maya would stand outside by night: “One... Two... Three...” Together they would count the stars.

“Soon,” Dil Maya would say, “you will be able to count all of the stars.”

In time, Surya began making the trek to school, eventually placing first in his regional examinations to earn a national scholarship for high school in Nepal’s capital city of Kathmandu. 10 years later, after completing his Bachelor’s degree in the United States and recruiting partners from around the world, Surya founded the Diyalo Foundation to give every Nepali child an education.

Diyalo’s mission is to deliver high-quality primary education to the millions of rural Nepali students prevented from reaching their full potentials. The core of our program is our novel pedagogy - a contemporary teaching style created specifically for 21st century rural Nepal. Our pedagogy is delivered with an architecture specifically designed to deconstruct entrenched colonial educational hierarchies. These two pillars, together with Diyalo’s TECH (Teach Entrepreneurship & Computer Hardware) program, comprise Diyalo’s tripartite approach to rural Nepali Education.

The Blueprint for Nepal

Our new school, outlined below, will serve 200 students. We hope to build capacity to construct five 200-student schools per year, totally 10,000 students served within a decade. In time, we believe our method could even be adopted at a national level to being the necessary educational overhaul Nepal so desperately needs.

Nepal’s future is bright and our roadmap is clear. We invite you to help us count the stars.
How We Work

“Our communities know what they want, they just don’t know how to get there - that’s where we come in, to help them achieve their dream”

- Adam Rouhana

Identify Partners

We work with communities who are deeply committed to their children’s education.

Collaborate in Thirds

Resources are provided equally in thirds by Diyalo, the local district education administration, and the community.

Community Handback

After five years, schools are handed back to their communities. Diyalo provides guidance in transition of leadership roles.

What We Do

Design

We craft solutions that deliver pedagogy, respond to the environment, maximize our dollars and inspire our students.

Build

Our local workers collaborate with local communities to carry out our design and build our school.

Train

Diyalo staff provides ongoing teacher training. Monitoring and evaluation tracks progress and efficacy for the future.

Sustain
According to the Ministry of Education, Nepal needs 250,000 classrooms equaling 30,000 schools.

SCHOOL LEVEL EDUCATIONAL STATISTICS OF NEPAL
CONSOLIDATED REPORT 2015 (2072)

District wise PMEC status at the basic level,

<table>
<thead>
<tr>
<th>Dist_Name</th>
<th>Available_CR</th>
<th>Required_CR</th>
<th>Class Rooms to be built</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>232746</td>
<td>226349</td>
<td>82806</td>
</tr>
</tbody>
</table>

10% of the population works overseas (who are 95% men), with remittance accounting for 32% of the Nepali economy.

With a 63% literacy rate - compared to the global 86% literacy rate - Nepal ranks 131st out of 167 tracked countries.

Nepal needs more schools to retain its youth and prepare them for the future. We currently serve 62 students in our existing 7-classroom school.

We can do more with your help.
Changing Pedagogy

“[The reason for high teacher absenteeism is that] there’s no proper infrastructure. They don’t know how to use their spaces, they’re not provided with enough resources, there’s no encouragement and the community is not continuously pushing them.”

- Surya Karki

It isn’t enough to follow the standard.

Guided by Aditi Adhikari, a native Nepali who holds a Master’s of International Education Policy from Harvard University’s Graduate School of Education, we’re changing Nepali education in three major ways:

Student-Driven Learning

- Hands-on interdisciplinary inquiry, allows students to learn about the world through active exploration
- Experiential learning engages multiple senses, builds social-emotional skills, creates a context for memorization, expands critical thinking ability and has greater relevance to real-world applications
- Students lead the way and are active 80% of the time as they collaborate with others, learn from their peers, read together, debate issues, and share their experiences, upending traditional 20:80 student-to-teacher activity ratios

Valued Teachers

- Combat low-status social norms by programming teacher’s value into the system from the ground up and countering social norms surrounding teaching as a low-status job
- Educating the educators, Diyalo Teachers have at least 12 years of school and 2 years of teacher education, additionally receiving Diyalo-specific Teacher Training to successfully students’ cognitive development through the 8th grade
- Fair wages for teachers, promoting their centrality to our model and creating an example for the rest of the country

Enriched Environment

- Equip schools with a library, art supplies, toys, basic computers, and internet
- Locally-available learning material (or made at school by teachers). E.g. dice, decks of cards, pebbles and sticks (for math), jars/ buckets, sand and soil, plants (for science), story books (English/ Nepali Language Arts), A4 paper, chart paper, colors, scissors, etc.
- Sophisticated equipment (single-purchase) for 7th and 8th grade students such as beakers, pipettes, burners, and petri dishes, base-ten blocks
Our early results are outperforming national averages.
According to our monitoring and evaluation team...

95% of our students are at or above the national average for Nepali
85% of our students are at or above the national average for Math
75% of our students are at or above the national average for English

Our longterm projections include:

0% Dropout rate from K through 8 compared to a national 22%
80% continuation to Secondary School compared to a national 30%
20:1 Student teacher ratio compared to a national 40:1
Crafting a New School

“I think the biggest thing wrong [with our schools] is that the British colonized India, and then India colonized our brains. We’re literally following the education system from the British colonial system.”

- Aditi Adhikari

We are re-imagining the classroom.

As part of his Master’s Thesis at Harvard University’s Graduate School of Design, Ethan Levine has envisioned a new hexagonal classroom design specifically for Nepal. Breaking away from British-colonial design paradigms, our Diyalo classrooms break away from existing hierarchies and preconceptions about student-teacher relationships to promote interaction in non-traditional ways.

Traditional designs abuse rectilinear orthography to enforce a teacher-as-authoritarian education model while excluding possibilities for other pedagogical approaches.

New designs create non-heirarchical geometries that can bend and conform to local landscapes, liberating both interior space and exterior form to create space for improvisation.

Our new classroom is more efficient.

By moving from a rectangular plan to a hexagonal plan, the new classroom is both spatially efficient and safer. Compared to a rectangle, the hexagon:

- **16%** more classroom area (perimeters equal)
- **50%** more shear wall length (perimeters equal)
- **7.6%** fewer wall materials (areas equal)
Our design methodology is expansive.

Though Nepal needs 250,000 classrooms, communities should also receive something specific and unique. Our methodology can produce 2,700,000 unique classrooms, which can combine into schools smaller than three classrooms apiece...
Our design methodology is adaptable. Environmental considerations must include:

**Temperature**
- Thermal massing according to variable heating and cooling loads
- Material selection based on thermal properties for temperature control

**Wind and Rain**
- Roof systems designed to manage variable wind and rain loads
- Apertures sized to manage light and ventilation across seasonal shifts

**Altitude and Geography**
- Material selection based on regional availability and geographic diversity
- Building orientation optimized for necessary solar gains

Our schools seize every opportunity.

**Exteriors...**
- Conform to local landscapes
- Create natural opportunities for adjacent agri-gardens nested into the building’s form
- Adjust to existing terraces and contours
- Divert rainwater for cisterns and irrigation

**Interiors...**
- Are amply lit and well ventilated
- Seek opportunities for lofted spaces and high ceilings to reclaim built space
- Provide storage spaces for students and teachers
- Create “layers” of entry thresholds
- Include specific amenities such as teacher offices and reading nooks