By blending student-centered, project-based learning with offline edtech in low-resource classrooms, Flying Colors turns learning into a joyful, engaging experience while building foundational, social-emotional, and digital skills. All without the internet.

From Challenge to Change With *Flying Colors*

A Tech-Enabled Project-Based Learning Model for Offline Classrooms

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Learner at YIDA primary school in Kyaka.

n a dimly lit classroom in northern Uganda, a group of P3 learners (roughly Grade 3) sit in a circle, their voices rising together in a chant: *"I am kind. I am strong. I am focused."* At the teacher's cue, they scatter: some grab electronic tablets and others head for colored pencils and paper. As there aren't enough devices for everyone, some students engage with digital lessons reinforcing the day's topic and others illustrate stories about their families and dreams while they await their turn.

One student is noticeably older than her classmates. The head teacher explains that she arrived in Uganda seeking better learning opportunities. At first, she struggled, especially with the language of instruction, which was different from her native tongue. She was close to dropping out.

Then a new program was introduced at the school, blending offline-first edtech, project-based learning (PBL), and social-emotional learning (SEL). Curious about the approach, she stayed. Week by week, her confidence grew.
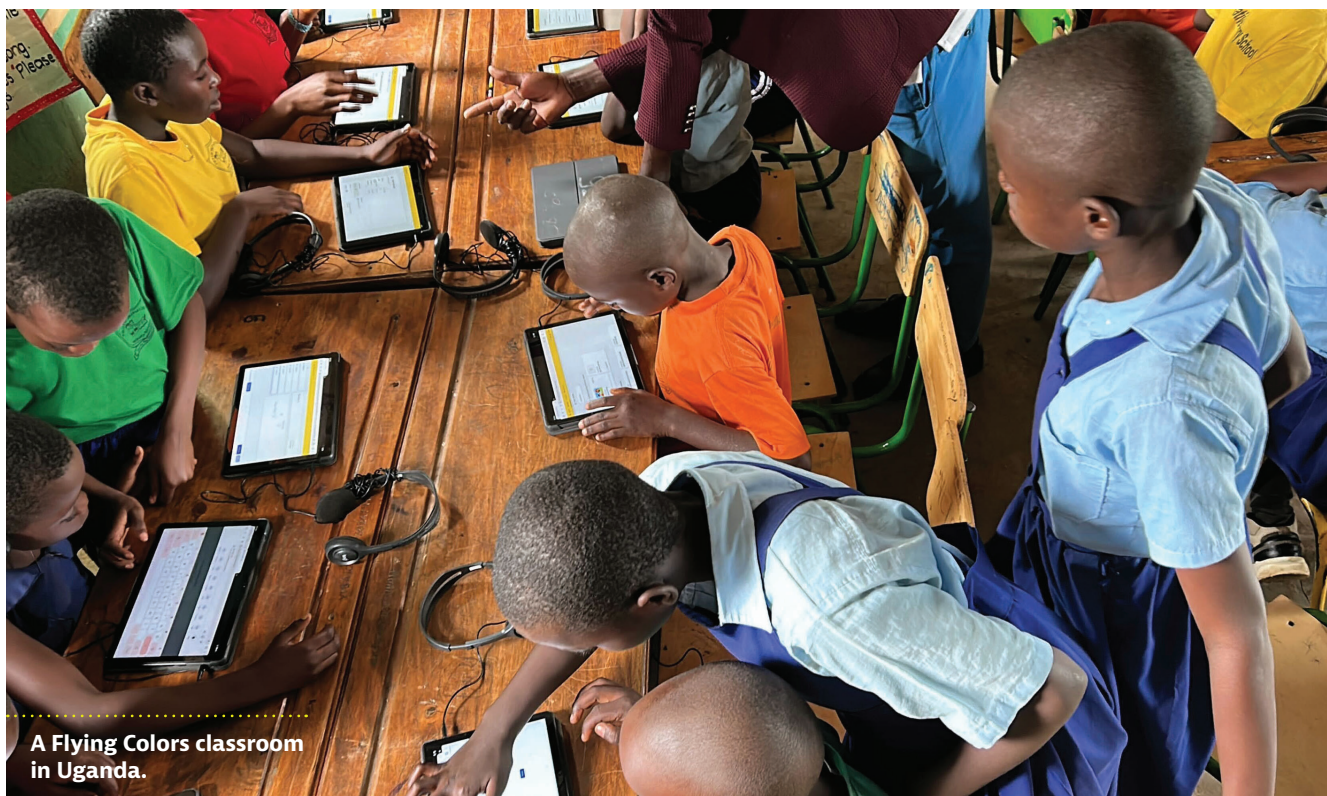
In just a couple of months, she went from a learner who was struggling to read to one who supports all her peers in class. Now, she never misses school and says the reason for it is that "school makes her happy."

Scenes like this are unfolding across Uganda in classrooms that have embraced this new learning model. These are classrooms in low-resource schools or refugee settlements, where trauma, disrupted schooling, language barriers, and limited access to trained teachers are the norm. In such settings, joyful, expressive learning isn't a luxury. It's vital.

This model illustrates what's possible when we design educational interventions with equity in mind. Because even in the most challenging circumstances, learning can — and should — be joyful, expressive, and transformative.
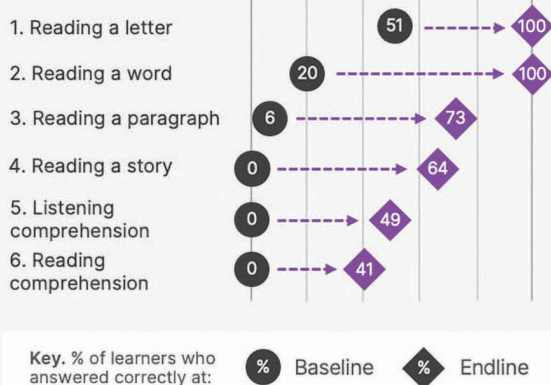
A Widening Learning Gap

Yet for far too many children, equitable and needs-driven opportunities remain out of reach. According to UNESCO,[1] 272 million children and youth are out of school, and an
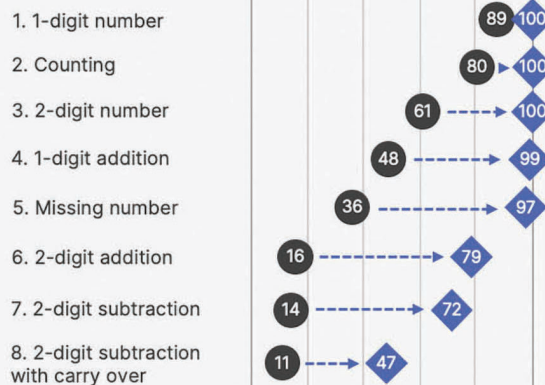

A Flying Colors classroom in Uganda.

FOUNDATIONAL LITERACY

1. Reading a letter — 51 → 100
2. Reading a word — 20 → 100
3. Reading a paragraph — 6 → 73
4. Reading a story — 0 → 64
5. Listening comprehension — 0 → 49
6. Reading comprehension — 0 → 41

Key. % of learners who answered correctly at: ● % Baseline ◆ % Endline

FOUNDATIONAL NUMERACY

1. 1-digit number — 89 → 100
2. Counting — 80 → 100
3. 2-digit number — 61 → 100
4. 1-digit addition — 48 → 99
5. Missing number — 36 → 97
6. 2-digit addition — 16 → 79
7. 2-digit subtraction — 14 → 72
8. 2-digit subtraction with carry over — 11 → 47

estimated 234 million[2] are in crisis-affected settings. The COVID-19 pandemic deepened these inequities, especially affecting girls, displaced children, and those who were already marginalized. But getting children into classrooms isn't enough. What they experience once there matters profoundly.

While artificial intelligence is reshaping how we learn, work, and engage with society, seven in ten 10-year-olds in low and middle income countries cannot read or understand a simple story — a condition now widely recognized as "learning poverty."[3] Most still lack foundational skills, let alone the chance to build the higher-order thinking and digital fluency this new era demands. The equity gap is growing wider, and the cost of being left behind is no longer just economic. It's existential.

But none of this is accidental. The deep inequities in education today are the result of long-standing, systemic forces: legacies of colonial, extractive, and exclusionary structures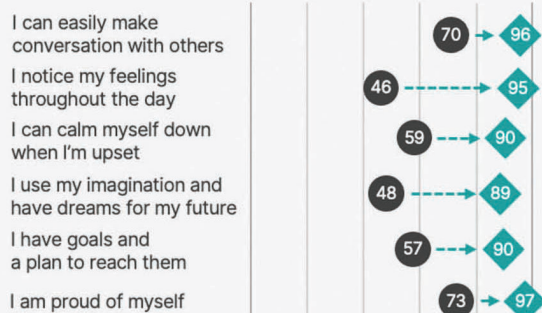 that continue to shape schooling around the world. From under-resourced classrooms and non-inclusive curricula to fragile teacher development pipelines, these challenges are symptoms of designs that were never meant to serve all learners equally. The good news is they can be redesigned.

And that's where the work of reimagining education begins. By having the courage to swim against the stream and innovate, we have the chance to rethink education from the ground up: not as a system built around connectivity and infrastructure alone, but rather as one rooted in openness, equity, and community leadership. It's an opportunity to design learning that is inclusive, offline-accessible, culturally resonant, and deeply student-centered — meeting learners where they are, and honoring who they are.
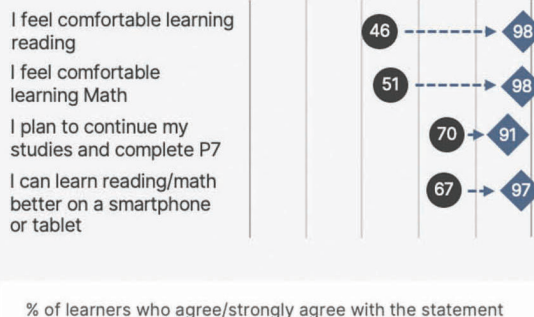
Learning Equality's Approach: Equitable and Collaborative Design

In 2013, while many were banking on a future where universal internet would bridge educational divides,

SOCIAL EMOTIONAL SKILLS

I can easily make conversation with others — 70 → 96
I notice my feelings throughout the day — 46 → 95
I can calm myself down when I'm upset — 59 → 90
I use my imagination and have dreams for my future — 48 → 89
I have goals and a plan to reach them — 57 → 90
I am proud of myself — 73 → 97

ATTITUDE AND PERCEPTIONS

I feel comfortable learning reading — 46 → 98
I feel comfortable learning Math — 51 → 98
I plan to continue my studies and complete P7 — 70 → 91
I can learn reading/math better on a smartphone or tablet — 67 → 97

% of learners who agree/strongly agree with the statement

we at Learning Equality — a nonprofit focused on fostering student-centered learning in low-resource contexts — chose the opposite: to design technology and educational programs that catered specifically to learning environments without connectivity. Today, with over 2.6 billion people still offline[4] and disconnected from quality educational content, that decision is more relevant than ever.

Our flagship product, Kolibri, is an adaptable, open-source suite of tools designed to facilitate personalized, student-centered learning in low-resource environments. It is centered around a learning platform with built-in educator support and it includes a library of content, as well as tools for organizing materials and aligning curricula. Localized into multiple languages, Kolibri supports self-paced and differentiated learning, critical thinking, and problem-solving. With it, we've reached over 13 million learners in more than 220 countries and territories globally.

But we recognize that technology alone isn't enough. Too often, digital tools are developed without meaningful input from the communities they're meant to support, resulting in solutions that fall short of meeting needs. Rather than closing educational and digital gaps, they often widen them. To truly make an impact, we must co-design with the communities we seek to serve, ensuring their agency, local ownership, and solutions that respond to their realities and meet their needs.

Therefore, back in 2022, Learning Equality in collaboration with nonprofit Amal Alliance and Ugandan partner HAF Uganda, and with support from LEGO Foundation, developed and piloted Flying Colors: an innovative, tech-enabled, project-based educational initiative aimed at rebuilding foundational literacy, numeracy, and emotional resilience to help mitigate learning losses of the pandemic.

We chose Uganda as the place to pilot the initiative because despite over 90% of Ugandan children beginning their primary school journeys, only half of them remain enrolled by about age 11. Many factors contribute to this dropout rate, including poverty, early pregnancy, domestic chores, child labor, and limited school infrastructure. Dropping out has lasting repercussions on children's future opportunities and well-being.

The pandemic exacerbated this challenge. Schools in Uganda closed their doors for nearly two years, leaving the futures of many children hanging in the balance. When schools gradually reopened in 2022, not all

learners returned. According to the National Planning Authority, it was estimated that about 30% of learners would not go back to school, and over 3,500 primary schools were expected to close.

In addition, Uganda is home to a large refugee population, with South Sudan's prolonged crisis causing waves of displacement and added pressure on the education system. Among refugees, the rates of out-of-school children are even higher. Those children are in critical need of interventions that accelerated foundational learning, supported their well-being, and created pathways to longer-term enrollment in mainstream school. And this is where Flying Colors came in.

From Challenge to Change With Flying Colors

Flying Colors supports both teachers and students, helping reframe education not just as survival, but as discovery, connection, and possibility.

The program was piloted in 2022/23 in Uganda's Palabek Refugee Settlement, in four schools with 714 out-of-school learners in P3 and P4 (equivalent to grades 3 and 4 in the United States). Learners had been out of school due to displacement or COVID-19 pandemic disruptions and struggled with English literacy and numeracy. Each classroom was equipped with solar-powered tablets preloaded with Kolibri, yoga mats, simple materials, and a playful learning set-up.

Each week began with SEL routines drawn from Amal Alliance's Colors of Kindness: breathwork, mindfulness, and affirmations that helped learners calm emotionally and focus cognitively. Learners progressed through Kolibri lessons at their own pace while teachers monitored progress through Kolibri's coach dashboard.

Project-based activities grounded learning in real-life relevance: designing markets, building health posters, or performing skits on emotional regulation. Art, play, collaboration, and meaning were woven into every lesson — rather than added on.

Within just 12 weeks, the pilot yielded significant outcomes:

HAF classroom in Palabek.

- **Literacy:** Only 20% of learners could read a word at baseline; by the end of the 12 weeks, 73% could read a paragraph.
- **Numeracy:** Just 11% of learners could do two-digit subtraction initially; at endline, almost all learners could perform both one- and two-digit calculations.
- **SEL:** Learners developed emotional awareness, confidence, and goal-setting skills; 99% enjoyed school, and 98% of learners from cohort one re-enrolled in mainstream school.

Flying Colors' impact can be found not just in numbers, but also in the confidence in a child's voice, the ease of classroom laughter, and the rhythm of learning reimagined. Teachers report higher attendance on Flying Colors days and note that learners are more engaged, expressive, and collaborative. "They come early when they know it's a Flying Colors lesson," one facilitator shared. SEL activities have helped calm anxious learners and encouraged shy students to speak in class, a shift noted by multiple educators across sites. Teachers also observe stronger peer support among learners, particularly during group work and creative storytelling.

Insights From the Field: Classroom Moments That Matter

In July 2025, armed with those insights, the Learning Equality team revisited the Flying Colors' classrooms in Uganda. The program, which includes in- and out-of-school children, is now being fully implemented by YIDA and HAF Uganda across four schools, with the support of the Swarovski Foundation and Vodafone Americas Foundation.

Throughout the trip, we observed much more than instruction. We witnessed deep moments of transformation.

At Aywee Primary School, a foundational literacy session opened with breathwork and call-and-response chants, easing learners into a safe, focused headspace. The room quickly transformed into a workshop of ideas: children drew portraits, mapped family structures, and began writing short stories inspired by their lives. "They laugh while they learn," a teacher told us, her smile mirroring that of her students.

At Ogili Hill primary school, we observed a vibrant SEL session centered on emotional vocabulary and peer collaboration. Students engaged in an activity called "Self-Esteem Soup," where they contributed affirming words to a metaphorical recipe

for confidence. The teacher guided students through group balance games and reflection circles, creating a space where emotional growth was treated with the same importance as academics.

World View School showed us the potential and the challenges of digital integration. Large class sizes meant that many learners struggled to navigate through the Kolibri platform independently, and delays in device setup caused disruptions. Still, the teacher improvised with determination, blending storytelling and drawing while troubleshooting. The resilience on display, from both facilitators and learners, underscored the realities of low-resource tech environments, and the urgency of continued investment in training and infrastructure.

Flying Colors' impact extends beyond lesson delivery. Teachers shared reflections in visual growth charts, mapping their transformation from tech-wary facilitators to confident guides of PBL and SEL. At YIDA's primary school in Kyaka II, a numeracy class fluidly combined Kolibri activities with local chants and group problem-solving. "I used to be scared of the tablets," one teacher said, "but now I use them to spark new ideas."

Equipping Educators for Transformative Teaching

Flying Colors approaches professional learning through a dual strategy: structured training sessions and ongoing educator support. At the start of the program, teachers participate in an orientation designed to introduce key pedagogical approaches, the curriculum structure, and technical components such as Kolibri usage. This foundational training helps teachers understand how to navigate the platform and implement the curriculum effectively in their classrooms.

As the program progresses, ongoing training sessions are conducted based on both anticipated and emerging needs. These include modules on interpreting student data from Kolibri, making instructional decisions, differentiating lessons, and leading SEL sessions. Trainings are designed to be interactive, often including collaborative discussions, demonstrations, and opportunities for hands-on application. Community-led community of practice structures are built into the model, encouraging collaborative reflection and shared learning among educators.

Teacher feedback is systematically collected through post-training surveys and periodic focus groups. Educators consistently report higher satisfaction when sessions include live demonstrations

and opportunities to practice new skills. In addition, targeted professional development was introduced for program staff supporting implementation. These sessions focus on classroom observation, feedback strategies, and teacher motivation, and were co-developed with implementing partners. Trainings are primarily virtual, with initial in-person components to build early familiarity and trust.

Building for Scale and Local Adaptation

Flying Colors has been consciously designed for scale, with each component of the program developed to support independent adaptation across diverse contexts. While certain prerequisites, such as basic digital infrastructure and educator presence, are necessary, the program itself is modular, open-source, and openly accessible. Interested implementers can access the Flying Colors channel, import the curriculum, and make context-specific adaptations. Detailed guidance on installing and using Kolibri is also freely available, along with curricular resources and training materials.

The curriculum is structured around the three core pillars: foundational literacy and numeracy, SEL, and PBL. While the current version aligns with Uganda's Primary 3 curriculum, its underlying design principles are relevant across geographies. Lesson plans, training materials, and implementation guides are all available in a sequenced format to enable straightforward adaptation without dependence on Learning Equality. Facilitators can implement the entire program or selectively use modules or lessons aligned to their learners' needs.

In low-resource contexts or settings with limited devices, the curriculum also can be used with targeted learner groups, such as those requiring remedial support or as part of a broader instructional strategy. It can integrate into existing programs — for example, by designating a day each week for Flying Colors activities. As the program continues to evolve, its commitment to openness, adaptability, and contextual relevance remains central, ensuring that future iterations can meaningfully serve learners and educators across varied environments.

Evolving the Model for Wider Reach

With ongoing support from the Swarovski Foundation over the next year, Flying Colors' scalable model will serve even more classrooms across Uganda. We're deepening our partnerships with refugee-led organizations and expanding into more government schools,

supporting learners in P3 and P4 and refining our group-based learning approach for larger classrooms.

To support educators and partners, we're creating a Flying Colors Starter Pack — featuring local-language onboarding videos, visual aids, and implementation checklists — designed to simplify adoption and foster continuous feedback through channels like WhatsApp. We're also testing AI-powered coaching tools that offer teachers real-time support: surfacing timely pedagogical tips, helping tailor lessons to learners' needs, and providing data-driven insights directly through Kolibri and mobile devices.

Beyond Uganda, we're engaging with ministries, NGOs, and global education organizations to explore multicountry pilots focused on foundational learning in disconnected settings. As Flying Colors evolves, we invite curriculum designers, tech innovators, funders, and practitioners to join us in co-creating meaningful, adaptable learning experiences, so that every learner — regardless of where they are — can thrive.

Centering Learners, Supporting Educators

This initiative demonstrates that innovation flourishes when technology is designed around real classroom challenges and human partnerships. By equipping learners with strong foundational literacy and numeracy skills that unlock future academic success, career pathways, and lifelong learning, we lay the groundwork for every child to dream big. By centering group-based models, contextualized coaching, and modular content, we're building more than a program. We're building a movement: one that empowers teachers, amplifies student voices, and transforms learning into a joyful, inclusive journey.

This work is about more than expanding access to tools. It's about reimagining what's possible when educators are trusted as leaders and learners are seen in their full humanity. Because when children are given meaningful, adaptable tools, their potential knows no bounds.

Notes:

[1] https://bit.ly/3JlQaIr

[2] https://www.educationcannotwait.org/global-estimates-2025-update

[3] https://bit.ly/47Anu7S

[4] https://bit.ly/4hg6JC4