# Uwezo Teaching: STEM & AI for the Girl Child and Youths

*Empowering Kenya's Next Generation of Innovators*

# Uwezo Teaching: STEM & AI for the Girl Child and Youth

- UWEZO Teaching is a transformative learning initiative designed to deliver high-quality STEM and AI education through hybrid learning, community in-person workshops, and school partnerships in Kenya.

- Our program provides a complete learning pathway from beginner-friendly coding to advanced AI certification, ensuring no learner is left behind in the technology revolution.

- We work with schools, communities, and educators to enhance teaching quality, improve learning outcomes, and foster creativity and critical thinking.

# Problem Statement

**High Youth Unemployment:** Approximately 67% of Kenyan youth are unemployed, which limits economic growth and innovation (KNBS).

**Gender Gap in STEM:** Less than 30% of STEM professionals in Africa are women, hindering diversity and inclusion (UNESCO).

**Urban-Rural Tech Divide:** Significant disparities in technology access exist between urban and rural areas, restricting equitable educational opportunities.

# Our Solution: Uwezo Uwezo Teaching

- Uwezo Teaching is designed to close the gap of the digital divide by providing inclusive, high-quality STEM and AI education that is both accessible and practical.

- Delivered through a hybrid model of online learning, mobile STEM labs, and hands-on community workshops, the program ensures that no student is excluded because of geography, gender, or income level.

- With a focus on real-world problem-solving, global certification pathways, and strong industry linkages, we equip learners with the mindset, creativity, and confidence to become innovators and leaders.

# How Uwezo Teaching Works

## Foundational STEM & AI Training

Participants start with essential coding, electronics, robotics, and AI basics, using engaging, project-based lessons to learn by doing.

## Certification & Career Pathways

Through partnerships with platforms like Cisco Networking Academy, Coursera, and Microsoft Learn, students access globally recognized certifications.

## Real-World AI Applications

Learners explore how AI shapes Kenyan industries, from mobile banking fraud detection to smart agriculture, and develop simple AI models.

## Challenge-Driven Innovation

Every learner works on a capstone project tackling a community need, such as designing health chatbots or irrigation control systems.

# *Objectives: Building Kenya's Digital Future*

**Primary Objective:**
To empower 500+ underserved Kenyan youth annually with market-relevant STEM and AI skills, creating a pipeline of tech innovators who drive local solutions and global competitiveness.

**Specific Objectives:**

- **Skill Development**
  Equip learners with hands-on expertise in coding (Python, Scratch), robotics (Arduino), and AI applications (NLP, computer vision) through project-based curricula.

- **Gender Equity**
  Achieve 50% female participation via girls-only hackathons, women mentor pairings, and safe learning spaces addressing cultural barriers.

- **Economic Mobility**
  Place 100+ graduates annually in internships/jobs through partnerships with tech hubs like iHub and Safaricom's FFA program.

- **Community Innovation**
  Support 20+ youth-led startups solving local challenges (e.g., AI-powered farm tools, e-health apps) with seed grants and incubation.

- **Systemic Change**
  Train 50 public school teachers annually to sustain STEM education, embedding our methodology into national curricula.

# Our Learning Model
*Bridging Digital and Physical Learning*

Uwezo Teaching uses a hybrid approach to overcome Kenya's tech education barriers. Our online platform delivers self-paced courses in coding and AI fundamentals, accessible even via low-bandwidth connections.

For communities lacking devices, mobile STEM labs bring hands-on experience with Arduino kits and robotics tools directly to villages. Quarterly in-person workshops led by certified facilitators reinforce skills through collaborative projects, like building water sensors or health chatbots.

This blend ensures urban and rural learners gain both theoretical knowledge and practical skills, regardless of infrastructure limitations.

# *Building Skills That Solve Real Problems*

We go beyond theory with a four-phase journey. Learners first master STEM foundations through tools like Tinkercad and Arduino.

Next, they apply skills to local challenges—for example, creating AI models to predict crop diseases.

Globally recognized certifications (Microsoft, Cisco) validate their expertise, while capstone projects like community solar grids turn knowledge into tangible impact.

Girls and underserved youth receive targeted support through scholarships, mentorship circles, and adaptive tools like voice-based learning apps for those with low literacy.
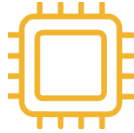
# Our Learning Model

*Bridging Digital and Physical Learning*

### Tinkercad

A free, browser-based 3D design tool that's simple enough for kids. Students drag and drop shapes to build models (like gears or enclosures) then export designs for 3D printing or electronics work.

### Arduino

Small, programmable circuit boards that let students bring digital designs to life - from blinking LEDs to reading sensors or measuring water quality. Kids learn simple C-style code to control their prototypes.
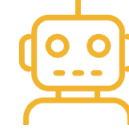
### AI Learning Platforms

Students explore artificial intelligence through accessible platforms that teach machine learning, image recognition, and natural language processing with practical applications for local challenges.

# Join Us in Coding the Future

- With your support, we can expand Uwezo Teaching from a growing initiative into a continent-wide movement that bridges the digital divide, unlocks career opportunities, and positions Africa's young innovators on the global stage.

- We seek funding as well as partnerships, your investment will directly shape futures, fuel innovation, and ensure that no young mind is left behind in the digital revolution. Together, we will code the future.

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