



HOLISTIC
LEARNING
INNOVATIONS

THE ROBOT TREE

Country: Uganda

Target Age: 10-15 Years

Learning Areas: Climate Awareness | Collaboration
| Communication | Creativity | Literacy

THE CONTEXT

Kololo Senior Secondary School is a government-funded school located in Kampala Central, along the Lugogo Bypass. The school has over 6,000 students. In the class of Ms. Akol Rachael, an experienced teacher and innovation designer, there are typically 80–100 learners. The school is surrounded by commercial buildings, and most students come from nearby low-income communities such as Naguru, Kamwokya, Mulago, and Bukoto.

Overcrowded classrooms, with teacher–student ratios as high as 1:100, make it difficult for teachers to provide timely, individualized feedback. In addition, most parents in the school’s catchment area are average earners, which restricts access to extra learning materials and support at home. Students also contend with space constraints both at school and in their homes, where the environment is often not conducive to focused study.





Kevin, a student participating in class during the lessons with Madam Akol



Students taking part in the Robot Tree exercise in groups.

THE CHALLENGE

How might we improve literacy and self-directed learning to counter large class sizes and low vocabulary in students?

Many students struggle with English and find it challenging to write meaningful compositions. Limited vocabulary further hinders learners' ability to express their thoughts effectively in writing. Learners showed little interest in lessons, with many leaving assignments unfinished or not completing them at all. Classroom participation was minimal, and the teacher struggled to provide individual attention due to the large number of students. As a result, feedback on assignments and lessons was often delayed, further hindering students' engagement and progress.

"My name is Kevin; I am a student in Senior Two. Whenever the teacher uses the robot tree, I am more interested, and I understand better. In my observation, students participate despite their learning abilities."

THE SOLUTION

THE ROBOT TREE

The innovation uses a visual and interactive “tree” method to encourage collaboration, creativity, and expression in writing. Students can focus their writing on all sorts of issues, including on the environment and nature, which also improves their climate awareness and knowledge.

HOW IT WORKS:

1. A learner carries the “tree” and vessels to a raised surface (table/desk) for all learners to see.
2. The teacher introduces the topic or task.
3. Learners brainstorm together to share what they know.
4. Students are divided into groups, each choosing a chairperson and a secretary.
5. Groups discuss the task, while the teacher moves around to guide and provide support.
6. A group member presents their ideas, while others listen, compare, and make corrections in their notes.
7. Each group is given cut-out paper leaves to write their final work.
8. Secretaries read out their group’s work for appreciation, after which the leaf is pinned onto the tree.
9. This continues until the tree is filled with leaf-shaped responses, creating a collective piece of learning.
10. Random learners may be asked to read information from the tree aloud.



The robot tree waits for student's final work
By Madam Akol



Learners pinning their final work
By Madam Akol

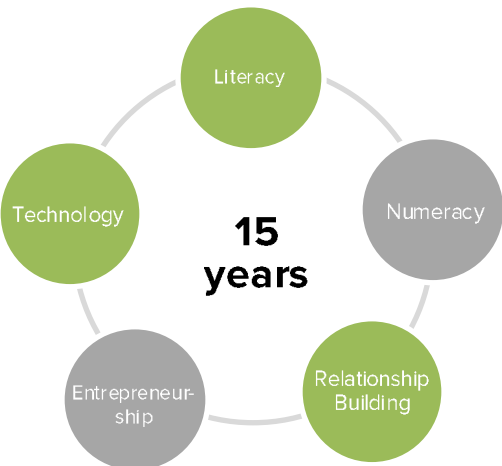
Competencies Targeted

The graphics below show the selected domains that Schools2030 Uganda have prioritised for each age group, in line with national curricula. Highlighted are the domains that this specific solution addresses.



5-year-old Domains

10-year-old Domains



15-year-old Domains



Learners actively pinning their final group work onto the robot tree.
By Madam Akol



Teacher Akol guiding the learners in their groups.
By Student

THE IMPACT

The Robot Tree has now been used for two years in five classrooms.

- Increased learner participation and interest in lessons.
- Improved collaboration and peer-to-peer learning.
- Learners engage more actively in writing tasks.
- The “Robot Tree” provides a creative and motivating way for students to share and build their vocabulary together.

I love the way Madam Akol handles her lessons; She goes beyond the classroom, and she has mentored many learners to become responsible in class and to their environment.

Kanoonya Edward, Headteacher

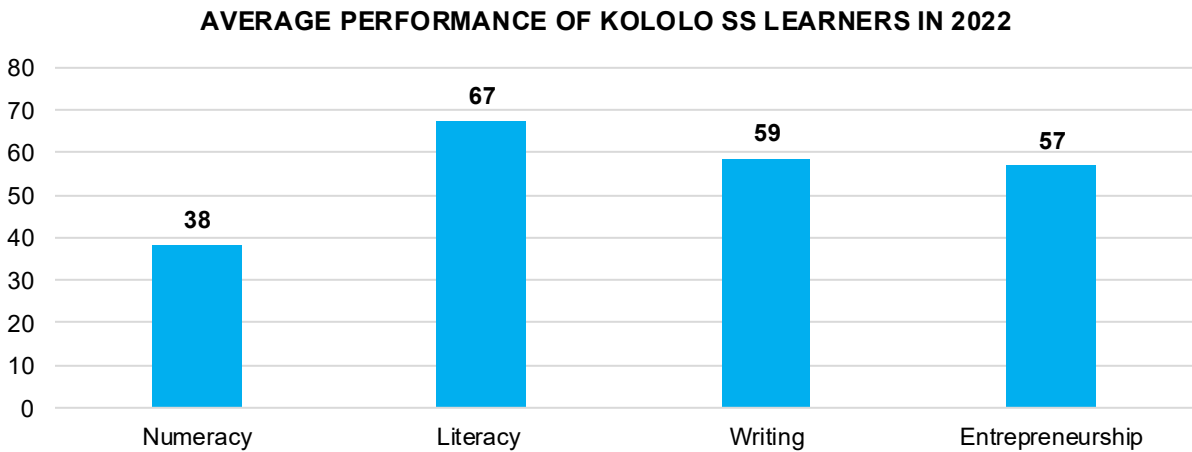
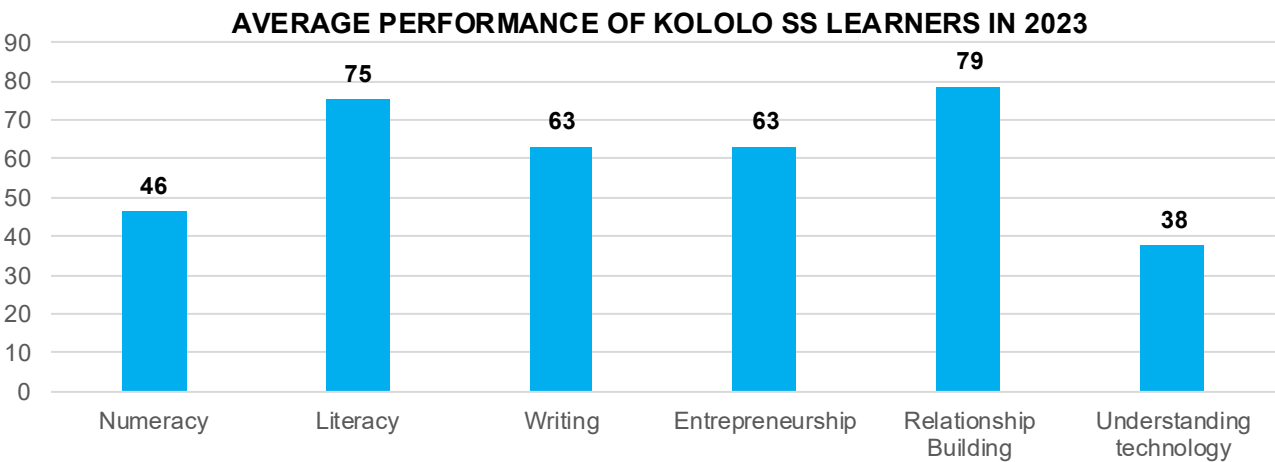
As we learn in class, we also feel empowered to see the importance of keeping our environment free from pollution.

Phoebe, Student S.2

When I saw Madam Akol using the tree, I saw how creative she is and the effort that she takes in her lessons. I observed her class, and the lesson was very insightful.

Madam Linda, Teacher

THE IMPACT (CONTINUED)



Meet the Teachers



Akol Racheal

Teacher / innovator

About me

- I have been working as a teacher for 23 years.
- I always leave no learner behind and I am passionate in the work I do.
- I would like to have a future where learners study for a course and become integral and resourceful in all environments.
- I would wish that innovations are scaled and used globally.
- Agha khan Schools2030 has improved my teaching methods and helped me to be that teacher with a difference.



Nansubuga Linda

English teacher

About me

- I have been working as a teacher for 15 years.
- I like giving learners feedback on the tasks done.
- To have learners who have completed their education and useful to the country.
- I would also wish to be innovative.



Namasime Titus

Chemistry teacher

About me

- I have taught for three years.
- I like being challenged by learners so that learning is made continuous, with exposure to new ideas.
- Seeing my learners succeed in the academia and proceed exceling in the world outside school.
- Academia would be more successful with adequate and effective tools and resources, accompanied by refresher training for education officers to stay updated.



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For more Information:

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