PROJECT TITLE: LIVE IT, LEARN IT

COUNTRY: UGANDA

SPONSORING COLLEGE: CORNELL UNIVERSITY

DESIGNATED PROJECT LEADER: MIA ADRIKO, CORNELL UNIVERSITY, UGANDA

PROJECT CO-LEADER: JULIANA KIDDE, ST. OLAF COLLEGE, UGANDA

DATE RANGE OF PROJECT EXECUTION: JULY 2023 - AUGUST 2024

We are Live it Learn it (L&L), a life long project that began as a Covid-19 initiative. The Ugandan government shut down primary schools nationwide in response to the pandemic. As a radio show centered around extremely low-cost experiments and real world stories, L&L was geared towards reducing educational inequality by making learning accessible to children who did not have access to remote learning technology. It has since then morphed into something much more significant. The Ugandan science curriculum needs to be more extensive regarding the breadth of topics covered if it aims to achieve similar standards of education to other international curriculums. As a recipient of The Go Make a Difference grant, we held a science summer camp. We held interviews, and five passionate students out of over 30 were selected to partake in it. These students were already exploring these topics independently, despite needing access to research tools like computers and science laboratories. The summer camp allowed these children to explore topics of interest outside their curriculum with the resources they needed. The intentions of Live it, Learn it, however, spread beyond being a supplement to the existing curriculum in Uganda. As the name suggests, we aim to help improve children’s comprehension abilities in STEM subjects by using real-world situations (the known) to unpack the more abstract ideas (the unknown).

Where we are operating: Having established a relationship with two Bwaise community volunteers, we were able to establish connections with nine schools in Bwaise, Kampala: Success School, Outspan School, Bwaise Parents, Bice Junior School, Buraq Islamic School, Destiny Infant School, Wonder World School, Dynamic School. We plan to run our pilot program within these eight schools, and then expand it accordingly.

Our mission is to improve access to knowledge in STEM in marginalized communities. With the Davis Project for Peace Grant, we intend to work with a sample group of students to test a new education model that fosters innovation and creativity. It is becoming more apparent that STEM programs in primary schools globally all share one inherent issue ingrained in how the education system is structured. Legislators initially set up schools to build factory workers; for those reasons, creativity and innovation do not lie at the core of many school curriculums. To create innovators out of students, educators need to show students the problems of the past and how people like Mathematicians like Descartes solved them; this gives students context on how today’s solutions came to be. Students need more knowledge on why solutions like calculus were created and are considered feats in mathematics. The historical approach to learning STEM is a common way of writing college textbooks, but we believe students need access to simplified versions of this history in the earlier stages of their education; students can better apply formulas if they know their origins, which will limit the unnecessary need for mass memorization.

Furthermore, we believe that research should be at the core of an education system because it forms an essential part of the experiential learning process. For this reason, we are pushing to have more STEM-based summer camps and competitions in the country. Unfortunately, one of the limitations we face in Uganda that significantly impedes our progress in the research industry is the need for more access to academic libraries. As much as we intend to publish textbooks that employ the historical approach to learning STEM, we also plan to compile a reading list with the help of college professors for students and schools in Uganda to consider purchasing.
Short term outcomes: We intend to use Davis Project for Peace Grant money to fund our project for a period of two years. With this money we intend to have the following outcomes:

- We will set up and oversee a total of three Live it, Learn it clubs in different districts in Uganda. We will monitor the clubs through Whatsapp groups, and via bi-weekly evaluations that will be held and communicated to us by the community volunteers that we work with.
- We will monitor usage of the textbooks and CDs through an evaluation template that will be shared with school liaisons. Results will be communicated to us on a monthly basis by the community volunteers that we work with.
- We will run a writing competition for university students to submit stories. The best ones will be compiled and put into a textbook based on topics. In the compilation stage, we will work with professors and editors to incorporate the historical teaching approach. The textbooks will be used as a curriculum for the Live it, Learn it clubs in primary schools in Uganda. CDs for experiments will accompany these textbooks.
- The Telus Spark Science center in Alberta, Canada, invited us to collaborate with them. We will be working together on the aspects of our projects that have similarities e.g. the music component of the CDs. We were invited on an all-expense paid trip to Canada to have a formal introduction with them, and we hope to continue forming partnerships like these in the STEM world.
- We will hold two more summer camps. One will be held in 2023 and serve as a pre-test. One will be held in 2024 and serve as a post test.

Long term outcomes:

- We will establish Live it, Learn it clubs in different districts in Uganda.
- The textbooks will have some sections translated to Luganda. There is a culture of promoting western languages over indigenous ones in the country. This is leading to the erasure of indigenous languages, we want to promote multilingualism.
- We will update the CDs routinely, using material that is produced by the Live it, Learn it clubs.
- We will hold yearly STEM summer camps and eventually STEM competitions as well. This is our way of taking a stand against an inherently “oppressive” system; many people have attempted to change the curriculum, but corruption always limits their progress.
- To build one of the country's first public college-level academic libraries.

Prospects for future impact:

- Improved academic performance overall in the sciences.
- Increased experimentation outside class and increased passion for small-scale scientific research.
- Increased support and funding from educational institutions for small-scale scientific research for primary school students.
- Increased number of competitions encouraging students to find innovative scientific solutions for problems in their communities.