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Bucknell University

“Sci-Touche” pour la paix, Rwanda

Tentative Date Range for Project Execution: June 1st - August 1st 2019

“...Government alone even with the right levels of financial allocations to the educational sector cannot sustain the momentum.” [His Excellency Paul Kagame, The president of the Republic of Rwanda](#)

INTRODUCTION:

Rwanda has been recovering from the 1994 Genocide against Tutsis for the past 25 years with very impressive economic growth. Quality education, one of the United Nations’ Sustainable Development Goals (Goal No. 4), remains one of the areas that still needs to be improved. Although the literacy rate has increased over the past few years (as shown by the net attendance rate which has increased from 63% in 1990 to 92% in 2010),¹ there is still a gap in different educational levels. In 2016, 72% of students were in primary schools, 16% in secondary schools, while only 1 % attended vocational training schools. There is clearly a gap between the number of students who attend primary schools and the number who move on to higher education. An even lesser percentage of students are able to continue on to tertiary education.

Every year before graduating from secondary school, all students are required to take a national exam that determines whether one can continue to the college level or not. This exam has both theoretical and practical components to it. Unfortunately, most of our education system is theory based. Most students studying sciences are not prepared for this exam, especially the practical component. Approximately 30% of these students fail the exam and only 3% get A's². This is mainly a result of limited lab equipment or lack of science labs altogether. Many students end up with little confidence in themselves and their ability to perform in the field. This further leads to higher leadership positions, especially in academia, in Rwanda being held by foreigners. Although this is a short-term solution, it limits the number of role models young Rwandans can look up to in those fields.

As students pursuing an education in Engineering in the United States, we have noticed a gap as we tried to compete with students who have been exposed to these resources from an early age. As the aforementioned quote by His Excellency Paul Kagame states, government efforts are not enough and we, as Grand Challenges scholars, believe it is our responsibility to address this issue starting with our home country. Therefore, we propose a solution that will help students have hands-on education from an early age whether they are interested in pursuing a science field or not. We believe that with improved education, Rwandans will work together to promote peace as they continue to rebuild the country. We know the power lies in us, and we need to pass it on to the next generation to assure the sustained development of our country, and we believe that this one of the ways to achieve this.

DESCRIPTION/ METHODOLOGY:

Our service will provide access to laboratory equipment that is usually used in the curriculum in Rwanda. We plan to start with Physics Laboratory experiment. These instruments may be as simple as a pendulum stand to explain the concept of gravity. The main goal would be to have a room set apart in the National Library in Kigali as a laboratory. We chose the Kigali Public Library because it is a central location for many schools, and it is the only Public Library in the country. Additionally, the Library hosts different projects including One Laptop per Child which helps expose students to technology at an early age. In order to lower the cost while involving the Kigali community, our process will involve working with local entrepreneurs and students from vocational training schools who can manufacture some of the materials that can be used for the practical parts of the curriculum. Rwandan entrepreneurs are highly skilled and are able to create the equipment, provided that they have the description and function of the products, which we plan to provide based on the curriculum and with support from the Catholic University of Rwanda. However, the materials that cannot be manufactured will be purchased in Rwanda. Some universities have access to the lab equipment, but it is still not accessible to primary and secondary school students. Having access to such resources would spark students’ creativity, as well as underscore the impact their education can have in the real world. We have presented this project at the 2018

¹ “Education | ONE UN Rwanda.” *United Nations*, United Nations, www.rw.one.un.org/mdg/mdg2.

² “Rwanda Education System.” *U.S. Embassy in Rwanda*, rw.usembassy.gov/education-culture/Rwanda-education-system/.

Bucknell University BizPitch presentation where we won the Change Maker and Audience Favorite awards that totaled \$750. We plan to use this money to offset our travel costs associated with the project.

OBJECTIVES:

Short Term Objective:

One of our short-term goals is to increase the percentage of students who pass the National Exam and impart a higher level of confidence to the graduate students by partnering with the schools that surround Kigali Public Library. Eventually, we hope to bridge the different gaps that were mentioned above: between primary school graduates and secondary school attendees, and between secondary education and vocational training education. At this stage, our primary target is secondary schools in the neighborhood surrounding the Kigali Public Library in Kacyiru, Kigali-Rwanda.

Long Term Objective:

The ultimate goal is to have similar labs across the country that would be open to people of all ages. We are hoping that even primary school teachers would be able to take a field trip to the lab in order to help spark this creativity at an early age. As of now, this is not an accessible option in many schools.

PROSPECTS FOR FUTURE IMPACT:

We envision creating an engineering camp where the students who use the space at the public library would participate in a design competition and the products would be sold to local companies. The revenue would then be used to sustain this project and eventually branch out throughout the country. More laboratory equipment for different subjects can also be obtained. Creating a pathway for student success will lead to post-secondary educational outcomes, which thereby lead to increased degree attainment and job placement. This way, those in positions of leadership and power in the educational sector will be native Rwandans. The latter will lead to reduced strife amongst factions. With the support of the Catholic University of Rwanda, and other entities in Rwanda we hope to have a lasting impact through this path. We have also been in contact with the permanent secretary of infrastructures, Patricie Uwase about our project.

ABOUT US:

Nancy Ingabire Abayo is a senior who is double majoring in Civil Engineering and Geology at Bucknell University. She is a Grand Challenges Scholar who aspires to participate in the improvement of infrastructures in Rwanda through academia. Upon graduating from Bucknell, Nancy plans to continue on to graduate school. She will be traveling home after graduation to complete the project the summer before starting graduate school. Assumpta Gasana is a junior who is double majoring in Civil Engineering and French at Bucknell University. Assumpta is also a Grand Challenges Scholar. Both are from Rwanda. The name Sci-Touche was selected during the application process for BizPitch 2018 to mean hands-on education in the sciences abbreviated in French. In this Business competition we gain two awards of 700\$ in total to contribute to this project. Our motto is "Igiti Kigororwa Kikiri Gito" which is a Rwandan proverb that literally translates to "A tree can only be straightened when young".