
Title of Project: “Sci-Touche pour la Paix”
Country where project took place : Rwanda
Sponsoring College : Bucknell University
Designated Project Leader name: Nancy Ingabire Abayo, Home country: Rwanda, College:
Bucknell University.
Student team member : Assumpta Gasana, Home country: Rwanda, College: Bucknell University

Section I: Narrative

Our initiative, Sci-Touche aims to raise awareness on the importance of practical education and to provide access to laboratory equipment to help enhance science education in Rwanda while following the curriculum established by the Rwandan Education Board. We came up with this idea as we both realized how left behind we were in different classes, and we realized that the rest of our classmates did not have a similar problem with practicals in our respective subjects. Looking back at our experiences in high school and our transition from high schools in Rwanda with minimal practical education to Bucknell University in very practical majors, we identified the gap that is still present in our education system, and we decided to do something about it. We did our research, talked to some schools and came up with a potential solution. We started by raising funds through competing in Bucknell BizPitch 2018, where we won two awards that contributed to project.

The main focus of Sci-Touche for the summer 2019 was Physics. We choose Physics because it provides a crucial foundation for other science, and that the equipment poses less restrictions on the spaces that can be used for safety reasons compared to Chemistry or Biology. The goal for the summer was to reach as many students and teachers as possible, and assist them in learning how to use the equipment. Our original plan was to obtain a permanent space at the Kigali Public Library (KPL) to host the Physics lab, however upon arrival we were informed that there was no permanent space available. After some negotiation with KPL we obtained permission to use the room for the summer during the mornings and some afternoons. From there we decided to hold classes from Monday to Saturday for 2.5 hours each day and 5 hours on some Thursdays and Fridays. Nancy, with the help of volunteers and teachers (Vivine Dukuze Mugenzi, Christian Mukama, Emma Marie Ndoringoma, and Maliza Fleurissa, Mutamuliza Marie Rose), provided physics lessons to students. The topics that were covered included Force and Motion, Light and Color, Electricity and Magnetism, Sound and Waves, and Renewable Energy. We selected the Kigali Public Library because it was a central location that is open to the public and can be easily found.

Each morning with the help of volunteers we would set up the equipment for the prepared lessons for the students, and we would pack it back up after the sessions. To boost attendance we created and shared different posters on social media and handed out hard copies with friends. At the beginning the attendance was low because school was still in session, but for the last three weeks of the program we had improved and consistent attendance. Since we had students from different levels of secondary school, upon arrival we would collect their names and class years so that we know how to tackle different topics. Along the way, we reached out to different schools and their directors as we were contemplating where to leave the equipment. We visited two schools one in Kigali and another on in the Northern Province. We spent a little more time at the School in the Northern Province, G.S APAPEC MURAMBI because the school did not have a laboratory or any resources to build on. Additionally the director proved to be committed to the success of his students and seeks to impact his entire region. During our visit to

the school we were accompanied by some volunteers from Girls in ICT Rwanda, who provided mentorship to girls at that school. At the end of their session, we showed the equipment we had to their Physics Teacher and provided a brief explanation on each equipment because some of them were new to him. Amazingly, the teacher was able to use the equipment to emphasize what he had taught the students immediately and the students were all very attentive and excited to see the theories they had covered in practice. As we watched the Physics teacher in front of the classroom, we saw the vision of Sci-Touche coming true. The teacher was able to match it with the Rwandan Education Board curriculum instantly and the students seemed to benefit from it. From the feedback we got from the director who was away for a mission when we visited was that the students were asking where we would be coming back for more science experiments. For this reason we decided that APAPEC MURAMBI was one of the main schools we would partner with at the end of the summer program at Kigali Public Library.

The second school located in Kigali is Groupe Scolaire KIMIRONKO which is a nine-years basic education students typically for students who cannot afford to attend the regular secondary schools. This was an initiative by the government to provide basic education to all Rwandans. The school in question also needed assistance in the area of science education, Upon discussing with the dean of studies of the school, she stressed that the teachers never learned in a practical setting themselves hence challenging for them to teach using the equipment. This inspired us to invite the teacher from this school to attend some our KPL session where she helped with explanations to students while learning how to use the equipment. Looking at the dedication of the school we added this school to our partners as well.

At the end of the summer program at KPL, we drove with the director of G.S APAPEC MURAMBI, His Physics Teacher, and one of the dedicated volunteers who also already mentored girls at this same schools. We took the equipment with us and set them up in a class room they had just built as part of their expansion project. We also drew and signed a contract with the director stating that they would do their best to invite schools in their region so that they can benefit from the equipment as well. One of the goals of our summer program that we did not reach due to limited time was to create video tutorials for equipment. There tutorials are available on Youtube, but they didn't necessarily match with the Rwandan Education Board curriculum. The contract states that the Physics Teacher would create these videos and upload them on a Sci-Touche Youtube Channel where every teacher and/or student would have access to it. As we finalized this report the first [video](#) has been sent to us, uploaded on Youtube and shared with other people.

As we have already discussed, in addition to providing access to equipment to Rwanda students, our second goal was to raise awareness. This included talking to different people over the phone and posting on social media. On behalf of Sci-Touche, Nancy was invited to one of the morning shows on Rwanda National Television called "[Mwaramutse Rwanda](#)" which translates to "Good Morning, Rwanda" where she shared about the initiative and presented one of the equipment and how it is used. While at RTV, she also emphasized the importance of practical education from her experience, and encouraged the teachers, School leaders, and the Youth to help carry this initiative to the rest of the country, because it is with everyone's input that change can be achieved. Assumpta was also interviewed by the [Newtimes Rwanda](#) in of their magazines regarding the project.

The project was very rewarding and we enjoyed the process. However, we did encounter some unexpected setbacks, but we were able to navigate around them. The first challenge was the delay of arrival of funds which meant we didn't go home with the equipment which delayed the start of the program as we had to ask different friends to bring the equipment for us while we look for local places to purchase

other equipment. Some of them we had to pay baggage fees others brought them for free. The expenses for transportation ended up being more than we had anticipated. Another setback was the fact that we did not find a permanent space at the KPL as we had hoped, but we were able to make use of the time we had the space and eventually found two other places to leave the equipment. Additionally some of the students who attended were not fluent in English, so we had to quickly adjust to the languages such as Kinyarwanda and French. For science, it is challenging to explain in Kinyarwanda because many of the terms do not exist in our language. Along the way there communication issues, but we were able to make Sci-Touche a success in spite of all the challenges.

With about 5 schools surrounding each of the schools, we are looking at more than ten thousand Rwandan students who will be reached directly. With the awareness raised through social media, [National Television](#) and other National Press outlets, we estimate to have reached at least half a million of Rwanda Students. Taking the impact into account, we believe that this can be increased exponentially, if we are able to hold the same sessions held at the Kigali Public Library every summer. We also envision having it at two different locations to accommodate more people, using the same equipment. As a result, we have talked to the director of LEAPR Lab who hosts different innovation camps by different foreign and local organization, to possibly offer a space for future summers. Recently we have also been in contact with an organization at North Carolina State University called SciBridges who design and ship kits to different East African Universities (Rwanda was not on their list yet) to enhance renewable energy education at different colleges. We have contacted them and they are interested in possibly collaborating with Groupe Scolaire APAPEC MURAMBI in the future. We hope Sci-Touche is creating a pathway for student success which 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 and promote peace in Rwanda. Peace embodies access to human rights and having access to basic tools such as education. Our project has raised and will continue to raise awareness and eventually as we stress the need of more practical education, we will inspire young people to pursue science related as now they would be able to visualize it hence a more self sustained Rwanda.

Quotes from Nancy and Assumpta

“Sci-Touche was a dream come true, a learning process, and a reminder that change does not take place overnight it requires persistence and teamwork. As an aspiring professor, I enjoyed seeing the looks on the students’ faces when something they struggled with made sense to them after a certain experiment. What Sci-Touche accomplished in just two months was more than I expected and I truly hope that more Rwandan students will be impacted.” Nancy Ingabire Abayo (Sci-Touche project leader in Rwanda summer 2019)

“This project made realize once again how critical networking is especially when you are starting an initiative and also how you must be patient. This project’s success went beyond what I envisioned to be possible definitely commitment, amazing teammates were crucial to this amazing initiative”. Says Assumpta (Sci-Touche Co-founder)