

Project Title: Algorer Rural Education STEM (ARES) Initiative

Country of Project Implementation: Sudan, Africa

Sponsoring University: University of Florida, USA

Project Leader: Osama Elbashir – University of Florida

**Project members:**

Mohamed Elbashir – University of Florida

Ibrahim Elbashir – University of Central Florida

Leena Mohamed – University of Medical Sciences and Technology (Khartoum, Sudan)

**Project Summary:** The ARES Initiative created a weeklong summer science camp that focused on biology, chemistry, physics, and computer literacy along with hands-on experiences. This helped create an environment with essential tools that encourage STEM education to young girls in Rural Sudan.

**How did you decide what issue(s) you wanted to address and what approach(es) or strategies you chose to implement in your project?**

My brother, Mohamed, on a visit to the school noticed the lack of resources for STEM in the girl's school and decided to investigate why. When talking with teachers and the principal he found out that these girls had to choose between STEM track or humanities track before going into high school. Many chose humanities because it was seen unusual for a woman to be working in the STEM field. As a solution to this problem, we decided to create a laboratory in the school to conduct scientific experiments to increase their interest in STEM to possibly influence them to pursue a career in STEM. One limitation we realized early on

**Why did you choose your host site? In what ways did local relationships support you or contribute to the project?**

The school that we worked in was Alkory Middle School for girls near the town of Merowe, Sudan. Our point of contact was Marwa who was a former teacher at the school who initially raised awareness of the schools' poor conditions. She was a passionate teacher and when we told her about Projects for Peace, she was immediately ready to help. I also had a personal connection to the school because it was the same primary school my mother attended when she was growing up. It was disheartening to learn she was able to receive a better education at the school back in the 1970s than today. We took initiative and wanted to help restore this school to create a space that will help invest in the area's future. Also, with my extended family in the area, I knew there would be supporters for this project that will help guarantee its success. The locals were always willing to remove barriers with them offering help or alternative ways of fulfilling our goal with this project. Support from the locals during projects is critical to overcoming difficulties of collecting items, shipping items, and dealing with the government in some cases. They provide a source of knowledge in getting around these barriers by explaining their processes since most services were different in operation than in the US.

**What changes or adjustments did you make to your original plans, and why?**

The original plan was for most of the equipment for the project was to be bought here in United States and be shipped to Sudan by cargo ship. However, our original shipping partner was unable to ship our items in time for summer. In our search for a different partner, we found a family who were going to Sudan and were willing to ship the microscopes and some of the lab equipment with them. We bought the rest of our lab equipment (glassware and protection) from *Prime for Scientific and Technical Supplies*, one of the only lab equipment sellers in Sudan. They were also willing to look for chemical supplies we needed on our behalf since most chemical suppliers only sold to factories and hospitals. We also changed from buying laptops, since the local repair shops were more familiar with how they worked making any repairs need in the long run easier. We also changed the length of our program down to a week, due to the rainy season starting earlier than expected. Many parents were uncomfortable with children being out midday with chances of heat strokes or afternoon dust storms that may come when the students were in school. To compensate for this, we also offered transportation for the students in case of any emergencies which added a layer of security for the parents.

**Are there opportunities for continuing your work on this issue? If so, please describe**

When speaking with my student contacts, they told us about the lack of infrastructure is not limited to just the girl's school but also all the schools in the area. With years of neglect from the Sudanese government and their ongoing transitional stage, there is no real system that can supply these schools with necessary teaching supplies. They lack textbooks, blackboards, paper, pencils, printers, and much more essential teaching supplies to give a proper education. Also, teachers are severely underpaid which has made many qualified teachers quit their jobs and start new professions that are able to support them. I believe that by giving them the tools to teach and offering them educational videos that help them understand the materials they are teaching can drastically improve the education in Sudan.

Reflection

**How do you define peace?**

Peace is a state of freedom that allows one to pursue what they want when they want without being hindered by outside disturbances. They are free of struggles of war, poverty, inequality, and all fears that endanger or hinder a person's potential. One can pursue their goals and have security that the system around them will provide them with equal opportunities and support them to reach their maximum potential.

**In what ways might your project contribute to peace? What changes occurred? Short-term? Long-term?**

I believe the Algorer Rural Education STEM project contributes to peace by showing the importance of investing in education for girls. This project was made to support these girls in their STEM education and open them up to a world that they aren't familiar with. I believe that this project has had a positive impact to encouraged them to pursue a career in the STEM with many expressing their interest during the program. I hope that this program changes the community's current perspective on the value on women education and encourage them to invest into it. With change in these rural areas, drastic changes in the Sudanese view in workplace, home, civil rights, and human rights begin to reflect more equality between the sexes.

**What did you learn about the dilemmas, challenges, or conflicts that underlie the targeted issues or utilized approaches/strategies?**

According to UNICEF, 49% of girls in Sudan are missing out on primary education. A large contributing factor to this disparity is Sudan's inegalitarian view of women. Its legal code is based on the restrictive Sharia law and government control by National Congress Party, a religious-based political group, who for the past 30 years has become a detriment to the country's views on women's education (Borgenproject). Women in Sudan are seen primarily as caretakers so investing in their education to many in the host area is unnecessary. Fathers have been taking their daughters out of school to help with household chores and take care of younger siblings. According to the locals, we learned that there is a lack of faith with the government and many doubt what the government can do for them. The high level of corruption has certain government officials siphoning education money to their own pockets for personal use. Leaving schools not just in rural areas but all of Sudan without proper infrastructure to educate children in Sudan. However, with younger generations in Sudan protesting for change and a new government there is hope that the situation will change. Sudan is beginning to change with the transitional governments, making it essential that these younger generations are educated enough to maintain that change and progress the country forward.

**Has your project changed the way you think about the world? How has the project changed, challenged, or inspired you?**

This project has shown me that many people have the potential to become great but only lack the necessary tools to reach that potential. Projects like this can do more for a community than just their intended goal such as providing a lab to a school. When people in these communities are given proper resources to succeed than they can see their own potential. It empowers them to take charge of their own futures which can help change people in the community for the better. Due to this I believe that we should as a society focus on giving aid that provides resources and aid that allows for these communities to rebuild themselves. Allowing for a more permanent aid that guarantees that these people will be able to grow and prosper on their own. During my time working on this project, I now want to start a non-profit organization that focuses on educational materials for students in Sudan. It's a long-term goal that I know will take years to start but this project has shown me that it is possible to pursue. One thing that this project has shown me that despite the extensive planning you as a person put in the situation can change in an instant. It is important to always be thinking of possible options to still lead you to your original goal when doing projects to move past barriers as quickly as possible. Switching plans is sometimes more ideal in working through problems and avoid wasting time trying to make the original plan work.

### Personal Statement

“Setting realistic expectations and being adaptable we're key to making the project a success. In terms of sustainability, we were able to allow community actors to take leadership with us giving them a sense of ownership and a vested interest in the project.” – Mohamed Elbashir (Project Member)

“Seeing the excitement of the students faces throughout the project showed their enthusiasm and willingness to learn about the scientific equipment and concepts. We hope that this summer camp program will continue to inspire these students to pursue higher education in STEM.” – Osama Elbashir (Student Leader).