

# Education Meheba: Experiential STEM and Tertiary Education Support for Refugee Children in

## Meheba Refugee Settlement, Zambia

Sponsoring University: Worcester Polytechnic Institute, Worcester, MA

Project Leader: Martin Thulani Milanzi

Project Execution: Timeline July 4<sup>th</sup> – July 30<sup>th</sup>, 2022

### **Background/Challenge:**

Located in North-western province, Meheba Refugee Settlement is the largest refugee camp in Zambia. According to a 2021 United Nations High Commissioner for Refugees (UNHCR) settlement profile, Meheba is home to 31,450 refugees from Angola, DR Congo, Rwanda, Burundi, and Somalia who sought asylum in Zambia.<sup>1</sup> Of this population, 50.33% are children enrolled in limited community schools and the overwhelmed Meheba High School at secondary level. While primary and secondary education has been made free in Zambia, and the government has continued to support top candidates to national universities, Meheba children do not have this support. Based on their refugee status, Meheba children do not receive student loans or bursaries from the state as they are not considered state responsibility. Consequently, admission to local tertiary institutions is nearly impossible due to their immigration status. Further, while some households are fortunate enough to raise funds for tuition fees for local trade schools for their children, this is still an arduous task as 43.92% of Meheba residents are subsistence farmers. As result, 80% of the adult population in Meheba has no tertiary education.<sup>1</sup>

Furthermore, while Meheba children receive free primary and secondary education, the quality of this education leaves room for concern. For example, despite having the freedom to take STEM subjects, Meheba children are yet to have practical science experiments in class because the government has opted for quantity over quality. This is made worse by the cost of purchasing materials being too high for schools and donor funds are mostly targeted towards infrastructure than the direct education of refugee children. Faced with rural and refugee life, the number of children attending schools in Meheba shrinks each year as they are either married off or forced to assist their family's farm. Beyond Meheba, many refugee children see a world offering little to no opportunities for their tertiary education. However, that is not the case. There are vast tertiary opportunities targeting refugees and former refugees globally. In brief, they have no means to access resources such as College Board and the Mastercard Foundation Scholars program pages while having a fully equipped computer lab in their school.

### **Proposed Initiative**

To bridge the gap between access to tertiary education and refugee children, I will work with **top fifteen Grade 12 Meheba High School** students to find and apply for scholarships. To do this, I will use various online learning and writing resources such as Khan Academy and Parapal to teach them the basics of essay writing for competitive applications. Further, I will recruit former refugee students receiving partial or full financial aid from local NGOs to facilitate group discussions and share their stories. I believe seeing and hearing someone share their success story having shared similar circumstances as them will boost their morale and eagerness to harness opportunities globally. However, before commencing the project, I will train the recruited student-staff on how to engage with minors and sign contracts with them detailing their roles, expectations, conduct, and benefits. In this way, I can safeguard the children from any possible abuse and exploitation. We will have one week to review our project goals and timeline. Further, I will take this time to also train the staff on how to edit and write college-level application essays before they engage with students.

Unlike targeting one specific area of education, I intend to make this project holistic and help students improve in areas directly affecting their education. Therefore, students will conduct national curriculum-based science experiments in physics, chemistry, and biology. This opportunity will be extended to the entire grade 12 class year. We will do three experiments; acid-base titrations, static electricity with balloons, and testing for starch in food using iodine; in chemistry, physics, and biology respectively. The goal is to conduct one science experiment each week while broadening their knowledge in other spheres. To encourage teamwork, students will be split into teams and try the spaghetti-marshmallow challenge first. Through this activity, we will ask students to resolve group conflicts when they arise while building a standing tower. After the challenge, the team will ask students to make a reflection on how the challenge helped them understand peace and conflict resolution while drawing a deeper understanding of challenges in their personal lives and academic journey.

After each science experiment, we will have discussions with students on what careers they can pursue in line with the subject. For example, after the titration experiment, we will discuss a list of careers that involve chemistry such as Chemical Engineering and Petroleum Engineering and find tertiary opportunities in these. Likewise, we will do the same for physics and biology. I am positive this will help students see their unlimited potential and possibly find a vocation in academia. As demonstrated in **Table 1.0**, we will debunk mental health and use this time to allow students to share their personal stories and coping mechanisms if they are comfortable. Further, we will give them tips on how to stay well and embrace mental health support amongst

---

<sup>1</sup> Data Port, UNHCR. "UNHCR Zambia: Settlement Profile - Meheba & Mayukwayukwa (as of February 28, 2021) - Zambian." *Relief Web*. 28 Feb. 2021. Web. 15 Jan. 2022.

themselves because they are the first contact for their peers. I believe many refugee children have experienced massive trauma and deserve to be heard and encouraged to heal peacefully.

Finally, while maintaining a steady STEM learning culture, we will continue to dedicate more time to college and scholarship search for the selected fifteen. With an expansion to into topics such cover letters and resumes for job search and scholarships while strengthening their writing skills. In the last week, we will schedule a Zoom meeting with the WPI Admissions Team to have the students learn, first time, from an admissions committee beyond Meheba. For daily and weekly project topics, refer to **Table 1.0** below.

**Timeline**

<b>Week</b>	<b>Day and Activity</b>	<b>H/W Assigned</b>
Week 1 (Student Staff Training Week in Lusaka)	Day 1. Host Student Staff training in Lusaka for project introduction, contract review and signing Day 2. Review college essay writing process and resources Day 3-4. Equipment Purchase Days Day 5. Design Science Experiments/ Design Student Group Activities/Marshmallow challenge Day 7. Team travels to Meheba by Bus	N/A
Week 2 (In Meheba)	Day 1. Marshmallow Challenge, Refugee Success Stories and Peaceful Conversations Day 2. What is tertiary education (an introduction to career paths and scholarship search) Day 3. Titration Experiment (students to work in teams with safety equipment on) Day 4. Navigating College Applications (Finding universities, scholarships, and funding)	Read given sample essay
Week 3 (In Meheba)	Day 1. Static Electricity Experiment Day 2. Introduction to application essay writing (the introduction paragraph) Day 3. Resume and Cover Letter Writing (How to find jobs when you graduate) Day 4. Drafting the main body essay Day 5. Debunking Mental Health (An overview on mental health and staying together)	Request access to Meheba IT lab for student resume h/w
Week 4 (In Meheba)	Day 1. Testing for Starch Biology Experiment Day 2. Final Essay Writing Activity using Parapal Day 3. College Board & Common App Profile Creation (Given Unlimited 3hr Internet Access) Day 4. Meet The Admissions (Zoom session with WPI admissions team) Day 5. Developing Peaceful Relations (Grow Your Network with B Flow –Singer/Rapper) Day 6. Student, Teacher Feedback Surveys	1. Create student profiles on common app (2. Invite Prominent Local Artist)

**Table 1.0 Table Showing Weekly Plan and Daily Activity for Education Meheba**

**Expected Outcomes**

Broadly, the project addresses peace by promoting a team-based learning environment while encouraging individuality and freedom of expression of each student. Similarly, the project addresses peace by offering hope to children whose family’s fled from conflict decades ago and teaching them about peace and mental health. Because this project encourages diversity, students learn to co-exists peacefully while gaining knowledge on how to become a global citizen through tertiary education. Generally, the expected outcomes are the following:

1. Students develop excellent scholarship search skills and essay writing skills
2. Students identify at least one career option that stimulates then intellectually through research
3. Learners demonstrate a detailed understanding of scientific topics taught to them beyond the class
4. Developed holistic youth ready to undertake life beyond high school as a refugee in Africa

**Impact Indicators**

1. Project gets 8/10 overall survey score
2. At least 10/15 Students identify a scholarship opportunity & receive two full scholarships by Jan 2023
3. Develop a partnership with the Book Bus Zambia for project longevity
4. Students lead creation of Education Meheba Club for continued virtual support from project lead

**Qualification**

Having gone through the college and scholarship search process myself, I have gained vital skills finding opportunities online for tertiary support. In the same way, I was hired to work for a non-profit organization, Kucetekela Foundation, in Zambia where I helped prepare students for SATs and apply to tertiary institutions abroad. Equally important, I helped over 20 refugee children from Meheba at my high school apply for Mastercard Foundation scholarships in 2020. Five received full scholarships to attend university at leading institutions in Rwanda, Kenya, Ghana, Morocco, and the United States. Thus, my working relationship with Meheba refugee camp. Furthermore, I am a nurtured student leader with a certificate in the Emerging Leaders Series at WPI, the Yale Young African Scholars Program 16’ in Ghana and the Ashinaga Africa Initiative Scholarship 19’ in Uganda. These programs have shaped my capacity as a problem solving, technology based, and critical thinking African social entrepreneur. I have also undertaken undergraduate research over the summer and understand the safety measures required when working in a lab. This undertaking was part of the EREE research initiative at WPI where I worked in a team to design a STEM curriculum for middle school students. Therefore, I believe this opportunity prepared me to create, initiate and lead this project.

<b>Name: Martin Thulani Milanzi</b>					Note: all funds in US dollars.				
<b>Project Name: Education Meheba: Experiential STEM and Tertiary Education Support for Refugee Children in Meheba Refugee Settlement</b>									
<b>School: Worcester Polytechnic Institute</b>					<b>TOTAL FUNDS REMAINING:</b>				
					\$ -				
Projects for Peace grant:		\$ 10,000.00							
Additional Funding, if any:		N/A			<b>TOTAL EXPENDITURES:</b>				
<b>Total funding available:</b>		<b>\$ 10,000.00</b>			<b>\$ 10,000.00</b>				
<b>Student Expenses</b>					<b>Project Expenses</b>				
<b>Travel (Including Airfare+Bus Fare)</b>	<b>Lodging</b>	<b>Communications</b>	<b>Food (Biweekly)</b>	<b>Miscellaneous</b>	<b>Non-Student Travel and Lodging+Food(Biweekly)*</b>	<b>Direct Equipment and Supplies**</b>	<b>Marketing and Event Support</b>	<b>Staffing Costs</b>	<b>Miscellaneous</b>
1800	400	100	100	N/A	800	5400	300	1000	
			100						
<b>Total</b>	<b>Total</b>	<b>Total</b>	<b>Total</b>	<b>Total</b>	<b>Total</b>	<b>Total</b>	<b>Total</b>	<b>Total</b>	<b>Total</b>
<b>\$ 1,800.00</b>	<b>\$ 400.00</b>	<b>\$ 100.00</b>	<b>\$ 200.00</b>	<b>\$ -</b>	<b>\$ 800.00</b>	<b>\$ 5,400.00</b>	<b>\$ 300.00</b>	<b>\$ 1,000.00</b>	<b>\$ -</b>
<b>Total Student Expenses: \$ 2,500.00</b>					<b>Total Project Expenses: \$ 7,500.00</b>				
<b>ADDITIONAL INFORMATION</b>									
<b>Travel cost Breakdown</b>					<b>**Direct Equipment and Supplies Cost Breakdown</b>				
Airfare	1700				Chemistry Titration Chemicals		2000		
Bus Fare	100				Physics Experiment Materials		1000		
Total	<b>1800</b>				Biology (Iodine and Apparatus)		500		
					Stationery		150		
					Lab Safety & Equipment		1000		
					Internet Router and data		200		
<b>*Non-Student Travel and Lodging+Food</b>					Printing Services				
NB: Student-staff have families in Meheba, therefore, the project will not cover their lodging.					Equipment & SupTransportation				
Bus Fare x 4People		400			Total		<b>5400</b>		
Lunch(Biweekly)		400							
Total		<b>800</b>							