

Skidmore College

Leaders: Ntsetselelo Dlamini, Bonkhe Magongo, Mlamuli Malindzisa

Country: Eswatini

Title: Reimagining STEM education in Eswatini

## **Background**

In Eswatini, around 20 000 students graduate high school each year, yet just about 7% of those are able to continue into tertiary institutions<sup>1</sup>. Stark differences also exist in the educational resources between rural and urban schools which is usually manifested in poor performance by students in rural schools compared to their urban counterparts in the final year national high school exams (also known as Form 5).

Of course, the continuing COVID-19 pandemic did not go unnoticed by schools in Eswatini. Over 350 000 students were affected by indefinite school closures<sup>2</sup>. In fact, most schools were completely shut down from March 2020 to March 2021. There was short-lived period when schools re-opened in March 2021, before closing again in July due to political unrest in the country<sup>3</sup>. This further exposed the inequality that exists between rural and urban schools as they all scrambled to carry on some form of remote education. During that period, some schools were able to do online education while this was just impossible for rural schools which often lack internet infrastructure to facilitate that delivery of education.

I consider myself fortunate to have gone to a rural school near Siphofaneni as well as an urban school in the heart of the capital of Eswatini, Mbabane. I was able to experience the unequal educational outcomes at first hand. For instance, when I was at Ka-Boyce High in Mbabane, it was normal to hear of fellow school mates who had been admitted to the national university with others even going abroad to pursue their university education while that was almost beyond my dreams when I was at Siphofaneni. Faced with such realities it is often hard for many students to even see the value of education itself.

## **Project summary and objectives**

Our project is in two main parts. The first part involves creating a podcast aimed at helping high school students in Form 3 and Form 5 as they prepare for external examinations. It will involve different volunteers who are currently studying Mathematics at university level. We want to bridge palpable gap that exists between math teachers and most students by offering a relaxed, casual and often humorous platform that equips students on strategies of solving Mathematical problems. We will solve classic problems on different mathematical topics and also invite students from different schools, through social media, to suggest the topics they find to be most challenging. While the podcast targets students in form 3 and 5, we anticipate that it will be useful to most students in high school as Mathematics is cumulative. The podcast will assist students as they grapple with remote learning and will be a useful revision tool even after classes return to an in-person format.

The second part is focused on establishing and improving computer literacy skills of the students that we will interact with. Most students in rural areas do not have access to computers and those that do are not fully equipped to use and engage with them in a meaningful and productive way. Under the topic of computer literacy, students will be taught basic information about computers from hardware to software and programs. Students will also be taught other useful skills such as how to find information on the internet and how to use the internet in ways that enrich their learning experiences and improve their lives. In order to bring this to fruition, we will closely work with Manyovu High School to develop a three-week intensive computer literacy bootcamp and a functional computer lab for the school. Towards the end

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<sup>1</sup> TKI 2020 <https://www.tkieswatini.org/about>

<sup>2</sup> UNICEF 2021 <https://www.unicef.org/eswatini/stories/learners-excited-about-schools-reopening-eswatini>

<sup>3</sup> UNICEF 2021

of the bootcamp, participants will work in groups for presentation project of what they learnt and how it relates to classroom material as well as lives outside the classroom.

**Project timeline**

June 5- June 10	Advertise podcast idea to students at Manyovu and other students through social media
June 12- July 18	Recruit volunteers for computer literacy bootcamp Record a couple of episodes to aid in advertising Commence regular release episodes following student needs
10 July- 31 July	Work with volunteers to design curriculum Set up classroom to be used as computer lab at Manyovu Purchase 20 laptops Training of volunteers
8 August- 26 Aug	Boot camp commences and runs for 3 weeks
29-August	Presentation of ideas by participants and reflection

**Project leaders**

1. Ntsetselelo Dlamini who is a sophomore student at Skidmore College majoring in Economics and Mathematics. His passion for Mathematics as well as comedy will play a crucial role in the podcast creation and will also use experience as a treasurer for African Heritage Club in management and budgeting of funds
2. Bonkhe Magongo who is a first-year student at the University of Oklahoma majoring in Engineering. His knowledge of computers and passion for science will be useful during the curriculum planning for the bootcamp.
3. Mlamuli Malindzisa who is a final year student at The University of Eswatini also majoring in Economics and Mathematics. His connection with students at the university of Eswatini and experience in leading his own NGO will prove useful in recruiting volunteers as well as ensure smooth running of the program.

**Sustaining the project**

The Mathematics revision podcast will continue to be available to students online to help students prepare for exams even after the summer during which this project will be taking place. It will also be made available to math teachers at Manyovu so that students can also have access to it offline. Updates will be made as necessary following changes in syllabuses or student preferences. Guest students will also be invited so that they help other students master material. The computers purchased from this project will be used as a lab for more years as well long after the bootcamp is concluded.

## **Budget worksheet**

<b>Item</b>	<b>Description</b>	<b>Total cost/USD</b>
Transportation	Transportation to and from Manyovu high school for volunteers. Local bus fares were taken into account to come up with this fee	120
Laptops	18 x \$350. Estimate found from HiFi Corp, a major computers and electronics store in Eswatini	6500
Podcast equipment	Microphones x 2, headphones x2. Estimante found at an online audio equipment store <a href="https://gear4music.com">https://gear4music.com</a>	200
Volunteers compensation	Estimate of funds to compensate for time of all volunteers and partners of the program	800
Internet expenses	We will install a router to use during bootcamp. Estimated found from prices of Eswatini MTN	350
Sundry expenses	This includes light refreshments during bootcamp sessions	200
	<b>Total cost</b>	<b>8170</b>

## PROJECT FOR PEACE PARTNERS AGREEMENT

This serves to confirm that the following parties have a pre-agreement to work together in carrying out a project for peace in Eswatini during the summer of 2020. The project will run from June to August 2022. The leaders are:

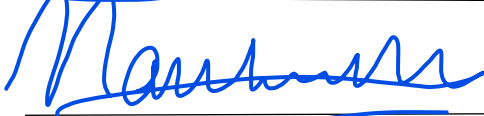
1. Mahlubi Ntsetselelo Dlamini- UWC Robert Bosch College alumna currently studying Mathematics and Economics at Skidmore College.
2. Bonkhe Magongo- UWC Waterford Kamhlaba alumna currently studying Engineering at the University of Oklahoma
3. Mlamuli Malindzisa – A University of Eswatini student in his final year of his Mathematics and Economics degree.

Signed:

Date



19 January 2022



19 JANUARY 2022



19 January 2022

# MANYOVU HIGH SCHOOL

P.O BOX 236  
SIPHOFANENI  
CELL: 7605 3103

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## Pre-approval agreement of Project for Peace

To whom it may concern:

**Date:** January, 2022

This serves to confirm that **Ntsetselelo Dlamini** and **Mlamuli Malindzisa**, who plan to lead a community service project at Manyovu High School have obtained pre-approval to work with students as they prepare for their final examinations.

The project is expected to run from late July through August in which leaders equip students on computational skills as well as revision to ensure learner success.

Please do not hesitate to contact me should you have any questions or require additional information.

Name:

SIPHIWE. P. NSUSHA

Signature:

*SP. Nsusha*

Date:

19.01.2022

