

Motivation

Murialdo is a school intense in engineering, science and agriculture. This enviable trend has ensured its students have thrived in leading governments, engineering and scientific in Sierra Leone and around the world.

With its great foundation in Science, Engineering and Mathematics; Murialdo secondary school is currently struggling to catch up with the tools needed to solve 21st century challenges and this limitation is preventing the current crops of teachers to get the very best out of their students. A notable example is the absence of modern library and computer center in a school of over 1000 pupils.

Furthermore, recent public examination performances in the core Sciences (Mathematics, Chemistry, Physics, Biology etc) and English are not representative of what the school has craved to achieve all these years.

In as much as the bulk of this document is geared towards enhancing performance in public examinations, it is also meant to get the very best out of the pupils as it does not set academic limits but provides the platform upon which students in early stages of their development get to do what they love. Pupils, whose talent lies elsewhere, will be provided the avenue to fully discover their potential. The aim is to get the next Bill gates, Steve Jobs etc. folks that change the way we look at high school education

The prospect of improving the school and preparing the students to be successful life-long learners in the 21st century are now and OMBA intends using this document as guidance in achieving this. The greatest danger to these realities is time and OMBA plans to take this head on by acting now and throughout this document we present strategies of achieving this.

Sponsors

The primary sponsor is Old Murialdo Boys Association (All branches and the parent body) and philanthropists, government and non- governmental agencies, local leaders and entrepreneurs and/ or any individual or group of individuals interested in the education of current students of Murialdo Secondary School.

Introduction

There are lots of barriers, misconceptions and problems associated with STEM education in Sierra Leone, first the lack of adequate infrastructure to support ICTs programs, these include electricity, water, telephone, etc secondly the stereotype perception about Engineering and Science Education been difficult which sadly has been validated by the lack of qualified teachers

in these subjects and students poor performances in public examinations and finally the lack of resources to keep pupils tuned to evolving technologies.

Through collaborative, hands-on, project-based learning, and a scientific method of discovery, students see the math and science within the classrooms they enter, the bridges they cross, the soccer fields they play, the buildings they see every day, the cars they ride in, the ferries they use, the airplanes that fly, the light they see, the list is endless. Also they will be given the unique opportunity to present their discoveries to a wide audience including colleagues, sponsors and even the community whose problem the project might crave to address; this will enhance student's communication and marketing skills.

Moreover, in the humanities, students have inadequate writing skills, analysis, critical thinking, research and a very low knowledge of the world around them. These limitations are hindrances to nurturing future lawyers, politicians and civil servants. Murialdo did not have the platform to allow students to participate in debating, essay and research competitions.

Another impediment worth measuring that this document will address is the lack of counseling in the early stages of the students' educational development which in most cases have led to students making wrong career choices.

The programs listed below are OMBA proposal to address all the aforementioned issues:

The OMBA Engineering and Science Challenge

The OMBA Literary, Debating, Vocabulary and Spelling Challenge

The OMBA Apprenticeship and Leadership Program

The OMBA Summer School Program

The OMBA Engineering and Science Challenge (OESC)

OESC Aims

Encourage collaborative engagements between students, teachers and the community to develop innovative/reverse engineer prototype systems that have the potential to solve real world issues.

Debate and discuss topics on Science, Technology, Engineering and Mathematics (STEM).

Provide the environment to nurture pupils' curiosity at the early stages of their development.

OESC Beneficiaries

Current pupils of Murialdo Secondary School, alumni of Murialdo Secondary School in tertiary institutions with great innovative/mentoring capabilities and current teachers of the school.

NOTE: Maximum allowable number per team is four (4).

OESC Selection & Reward Process

At the start of each academic year, OMBA shall send out an official letter detailing the intent of the project and request through the principal for submissions of **projects topics and abstracts/executive summaries.**

OMBA National shall set up an educational committee of at least three individuals to interface with the school and all other branches of OMBA on this deliverable.

A committee of not more than six (6) OMBA members drawn from different OMBA branches shall evaluate the different submissions and recommend a single project for sponsorship **NOT later than two weeks from the time the abstracts/executive summaries are submitted.**

OMBA shall provide an initial start-up amount of five hundred thousand Leones (Le 500,000) to the selected team to start working on the project.

With the prototype and documentation complete, OMBA shall provide an additional one million Leones (Le 1,000,000) **NOT later than ONE week from the time they were submitted** to the team to encourage them to work on a real design **if they so wish.**

Responsibilities of Selectees of OESC Program

The selected team shall report the status of their project through OMBA secretariat in a monthly manner.

The selected team shall use table1 – Project Presentation Format to present their final design model and documentation through OMBA secretariat a month before their final school examination.

Note: Depending on the status of the project, OMBA Educational Committee (OESC) shall decide to allow the team to work on the project during the holiday, with the understanding that work on the project will not spill into a new academic year.

Duration of Project

The project duration shall be ONE academic year.

OESC Project Presentation Format

The project proposal shall be presented to OMBA in the format shown in table.

<p>Topic:</p> <p>Team Name (Provide a Team Name that spells out what you are setting out to design, eg, “Team Voltage Controller” or “ Team Smart Ebola Prevention” etc:</p> <p>Team Members:</p> <p>Abstract and/or Executive Summary:</p> <p>Design/Research Paper Question (Reference questions definitions below):</p> <ul style="list-style-type: none">• What is the big question you hope to answer through this design/research?• Design/Research Significance• Goals/Objectives• Plan• Requirement• Problems & Solutions <p>Mentor Signature (Teacher or Community member): Date:</p> <p>Principal/Vice Principal Signature: Date:</p> <p>Parent/Guardian Signature: Date:</p>
